

AD-A033 345

FLEET WEATHER FACILITY SUITLAND MD
WESTERN ARCTIC SEA ICE ANALYSES 1972-1975.(U)
JUN 76

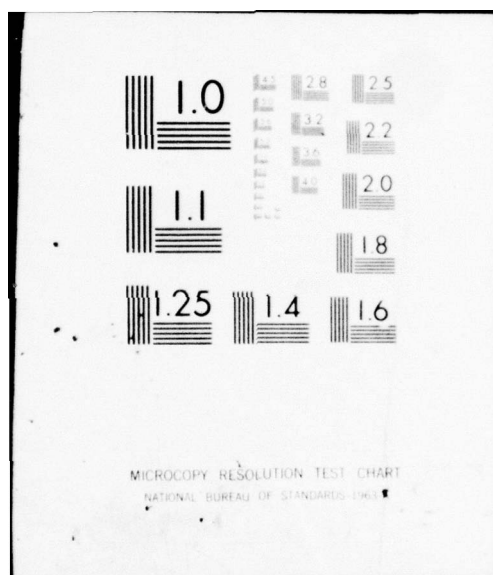
F/6 8/12

UNCLASSIFIED

NL

1 OF 3
AD
A033345





WESTERN ARCTIC SEA ICE ANALYSES

ADA033345

2



DDC
DEC 13 1976
Revised

1972—1975

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

Copy available to DDC does not
permit fully legible reproduction

The U.S. Navy has a long and colorful history of polar exploration and currently is an active participant in the growing national activity in the Arctic and Antarctic. The strategic importance and increased demand for the natural resources of these areas has resulted in a greater requirement for environmental information.

Until a few years ago, reliable sea ice information in the polar regions was based on a relatively few shore station and ship reports augmented by limited aerial reconnaissance data. These data were further restricted to the relatively small areas observed primarily during the ship operating season. The principal aim of this publication is to provide operators and researchers with historical weekly hemispheric analyses of sea ice conditions derived principally from satellite imagery supplemented by conventional observations.

The advent of high resolution satellite imagery combined with the ground truth of conventional observations has only recently provided description of the polar ice fields on a semi-synoptic scale. Since 1970, the Fleet Weather Facility at Suitland, Maryland has prepared operational analyses and forecasts of sea ice conditions in the Arctic and Antarctic for the Department of Defense and various other users. The results of these initial efforts are contained herein.

FOREWARD

The charts were constructed by Navy ice analysts under operational time constraints from satellite imagery and conventional data. Reanalysis with late data was not normally attempted; rather the current analysis was prepared incorporating this to the extent possible. The analysis was compared with available climatology in an attempt to eliminate gross errors. Scanning radiometer imagery, visual and infrared, from the National Oceanic and Atmospheric Administration (NOAA) satellites and microwave radiometer data from the NIMBUS V research satellite were the primary data sources. Limited use of the Earth Resources LANDSAT and Defense Meteorological Satellite Program (DMSP) imagery as well as conventional observations were utilized. The 19.35 GHZ microwave radiometer with 25 kilometer (KM) resolution aboard NIMBUS V provided an ice edge and limited inner pack conditions. This was the basic data source during the polar night and over areas dominated by persistent cloud cover. During the seasons with adequate light, visual data from the Very High Resolution Radiometer (VHRR) with 1 KM resolution and the 4 KM resolution data from the Scanning Radiometer aboard NOAA 2, 3, and 4 satellites were utilized. Infrared radiometer data was of limited value primarily due to seasonally small water-ice temperature differences.

The user of this publication is reminded that the information presented reflects an initial effort prepared for operational use and should temper his application accordingly. Comments regarding any aspect of the analysis effort are welcomed.

STANFORD C. BALMFORTH
Captain, U. S. Navy
Commanding Officer
Fleet Weather Facility
Suitland, Maryland

[illegible]

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

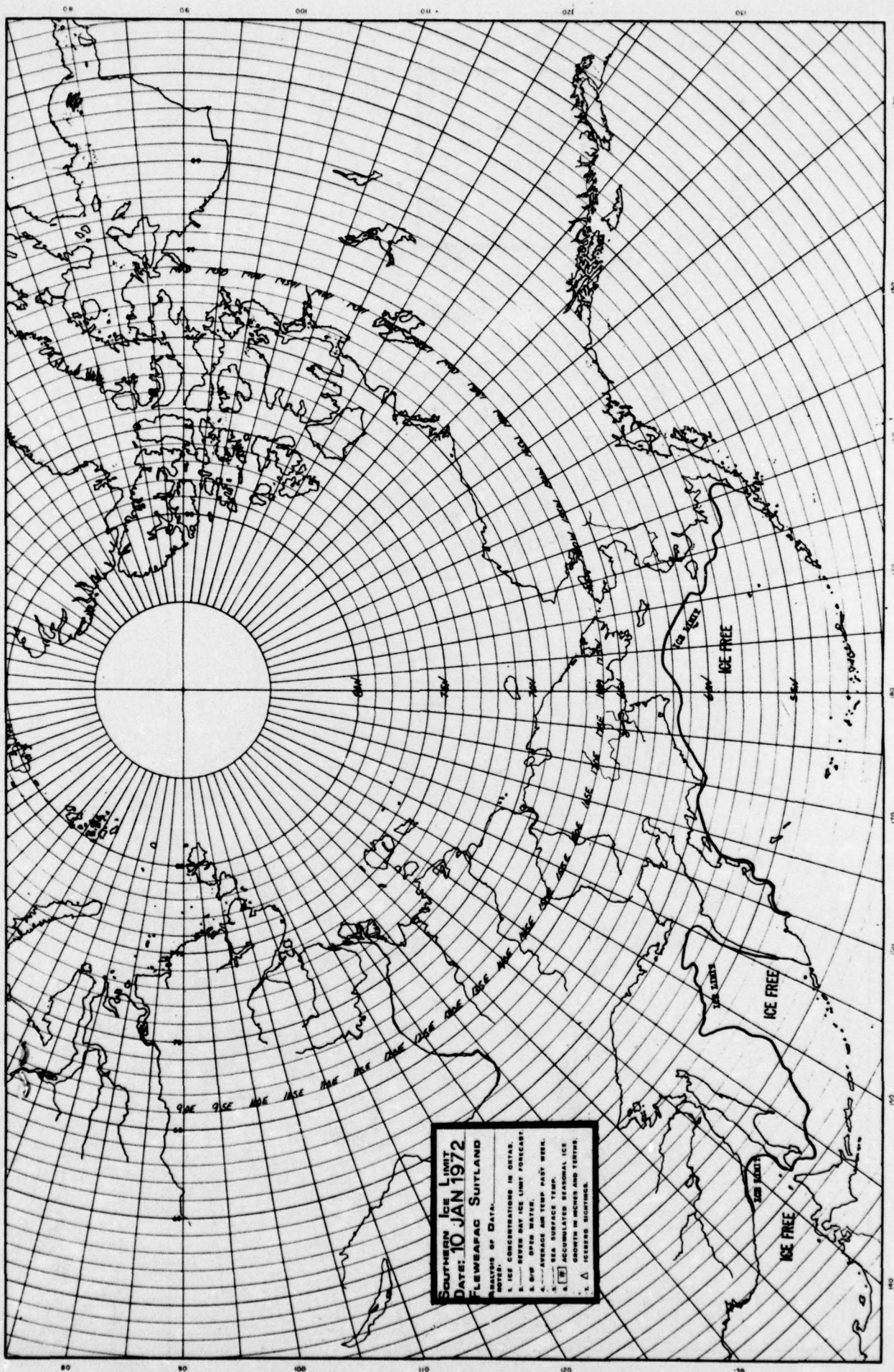
REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) ⑥ Western Arctic Sea Ice Analyses 1972 - 1975		5. TYPE OF REPORT & PERIOD COVERED 1/72 - 12/75
7. AUTHOR(s) Fleet Weather Facility, Suitland		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Fleet Weather Facility Navy Department Washington, D. C. 20373		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS ⑫ 212 p.
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) ⑨ Rept. for Jan 72 - Dec 75.		12. REPORT DATE Jun 76
		13. NUMBER OF PAGES 208
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Western Arctic Alaska Ice Bering Sea Ice Forecasting Chukchi Sea Sea Ice		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This document presents a sequence of operational sea ice analyses prepared weekly for the Department of Defense. The analyses include the location of the ice pack edge, inner-pack ice concentrations, 7-day forecasts of the position of the ice edge, positions of major ice-bergs, and, occasionally, the ages and growth stages of the pack ice.		

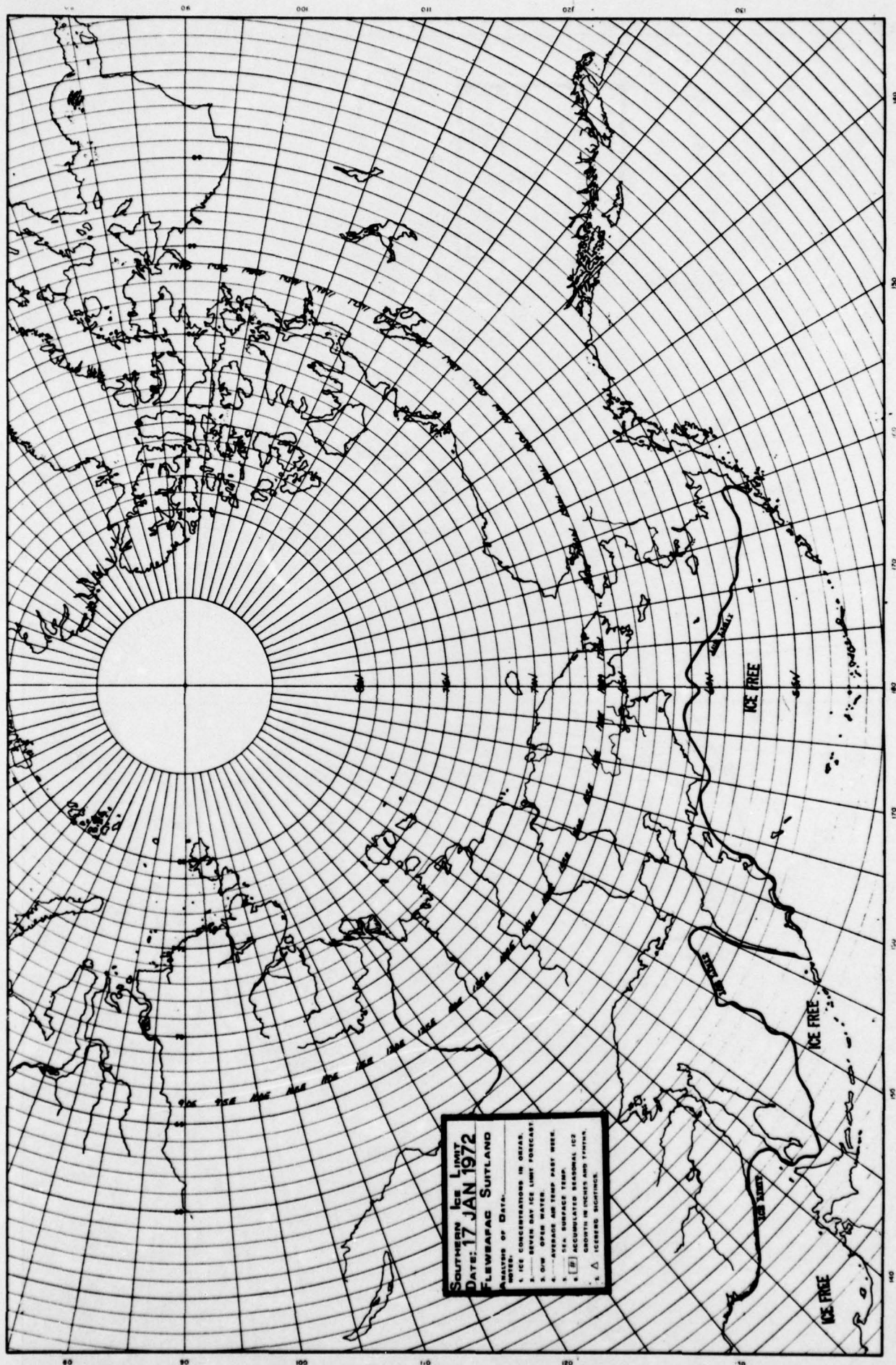
SOUTHERN ICE LIMIT
DATE: 03 JAN 1972
FLEWEAFAC SUTLAND

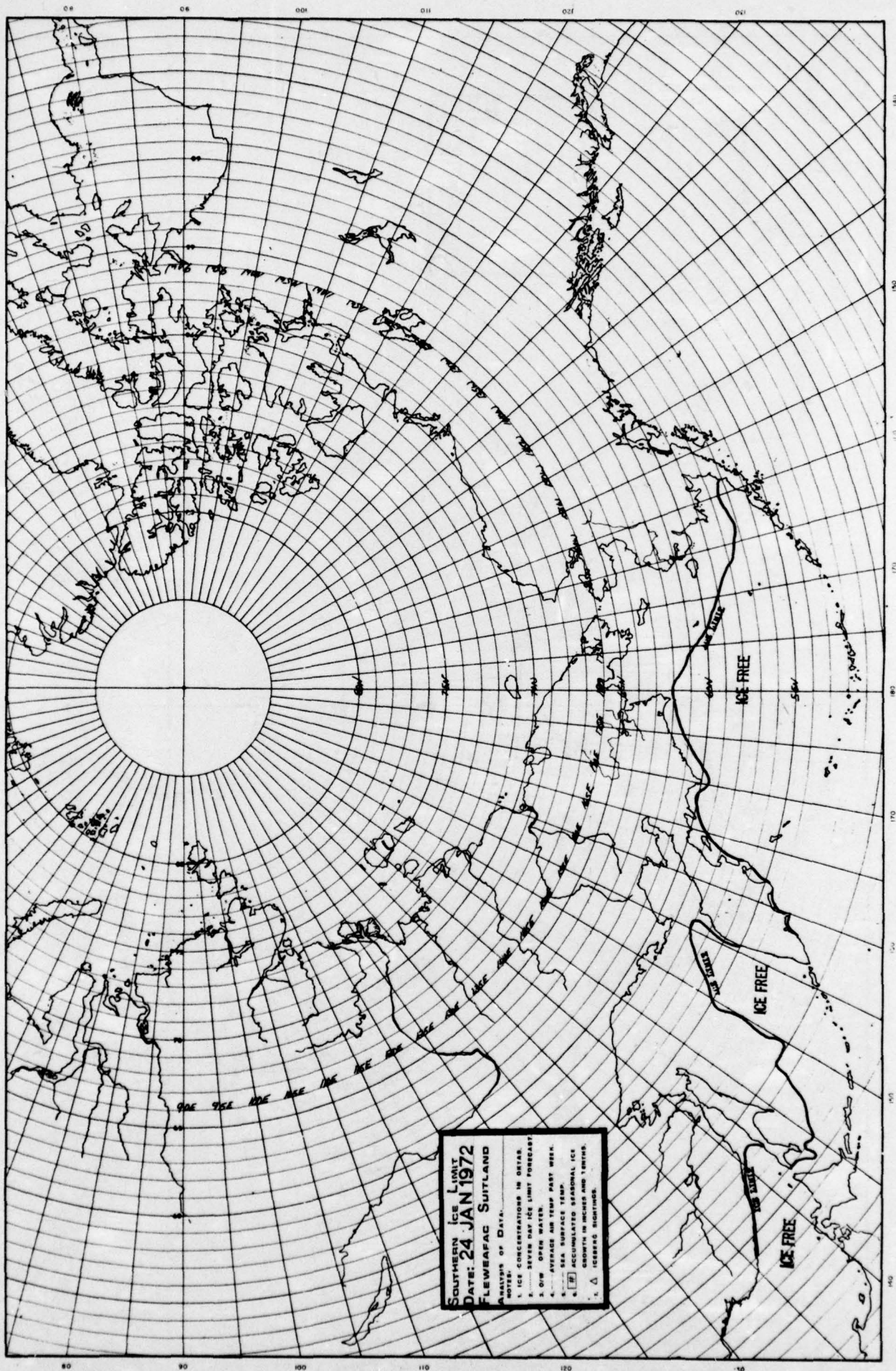
SOURCES OF DATA:

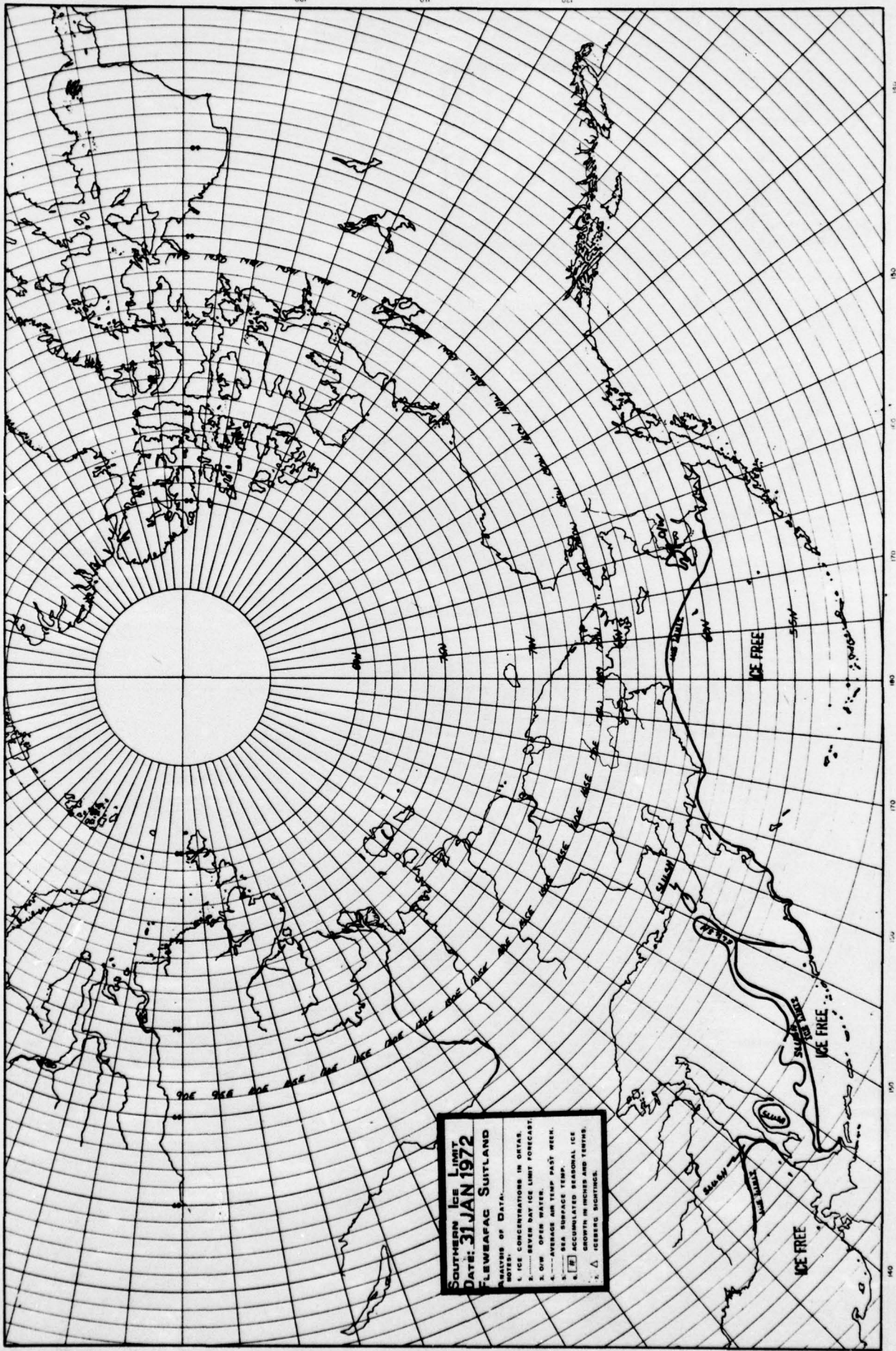
- 1. ICE CONCENTRATIONS IN ORION
- 2. SEVEN DAY ICE LIMIT FORECAST
- 3. "IN" OPEN WATER
- 4. AVERAGE AIR TEMP PAST WEEK
- 5. SEA SURFACE TEMP
- 6. ACCUMULATED SEASONAL ICE
- 7. GEOTID IN INCHES AND TENDR
- 8. AVERAGE TIDEGAGES

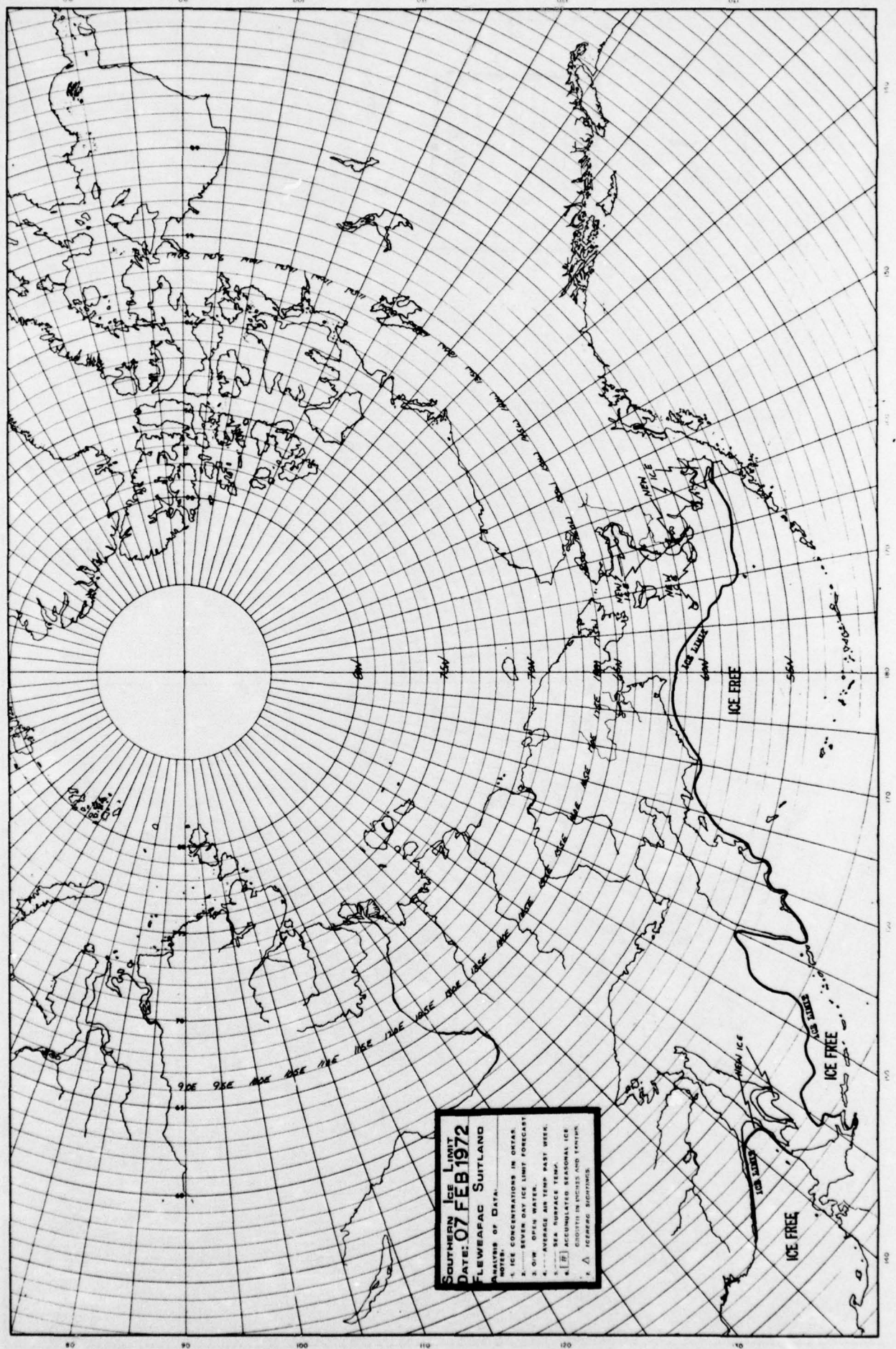
SOUTH AFRICAN ICE LIMIT
 DATE: 03 JAN 1972
 FLEWEAFAC SUITLAND
 ANALYSIS OF DATA
 NOTES:
 1. ICE CONCENTRATIONS IN JUNE
 2. STEVEN MAP ICE LIMIT FORECAST
 3. 100% OPEN WATER
 4. AVERAGE AIR TEMP PAST WEEK
 5. SEA SURFACE TEMP
 6. ACCUMULATED SEASONAL ICE
 7. GROWTH IN INCHES AND FEET
 8. 100% ICE COVERAGE
 9. 100% ICE COVERAGE

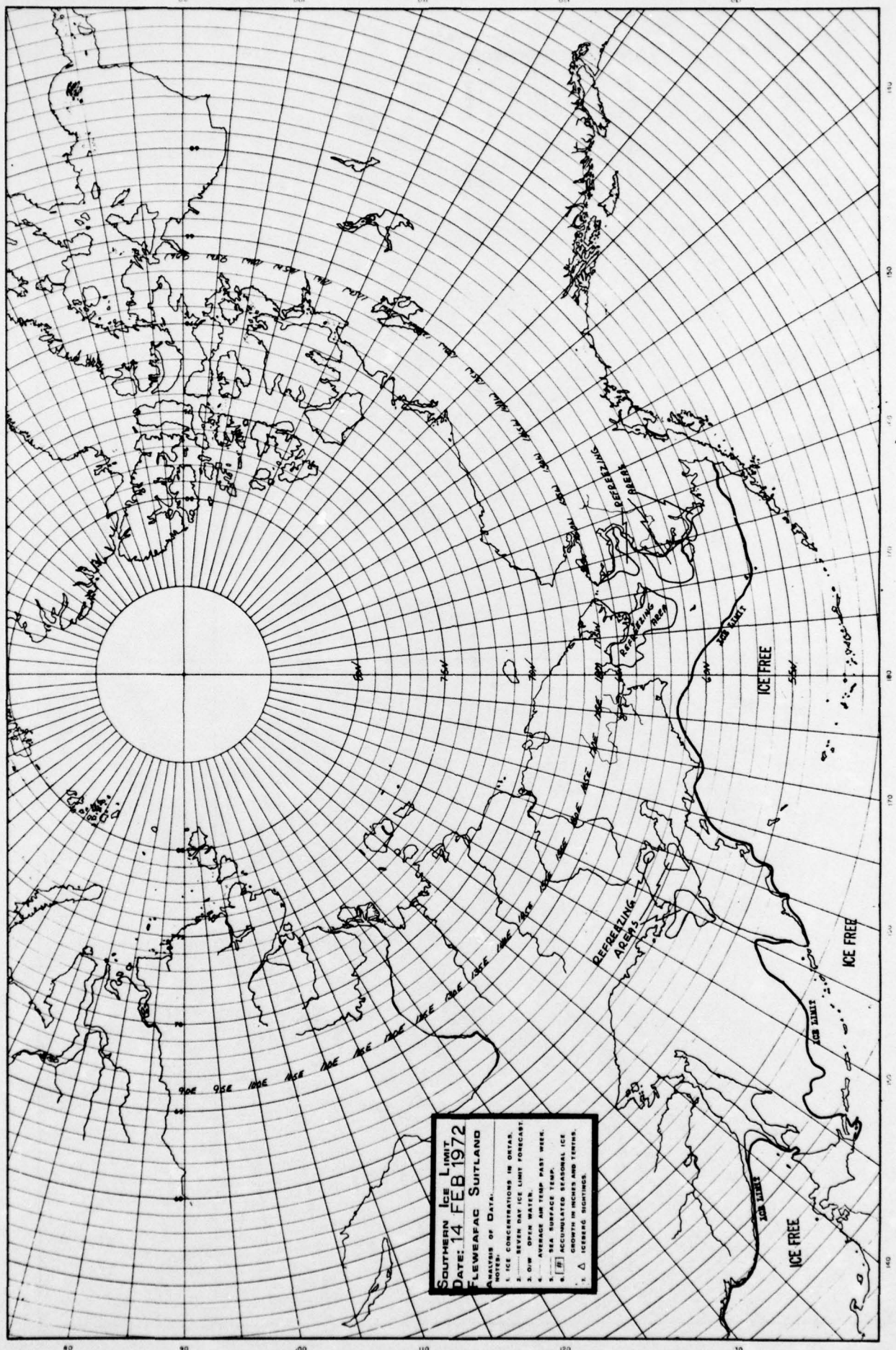


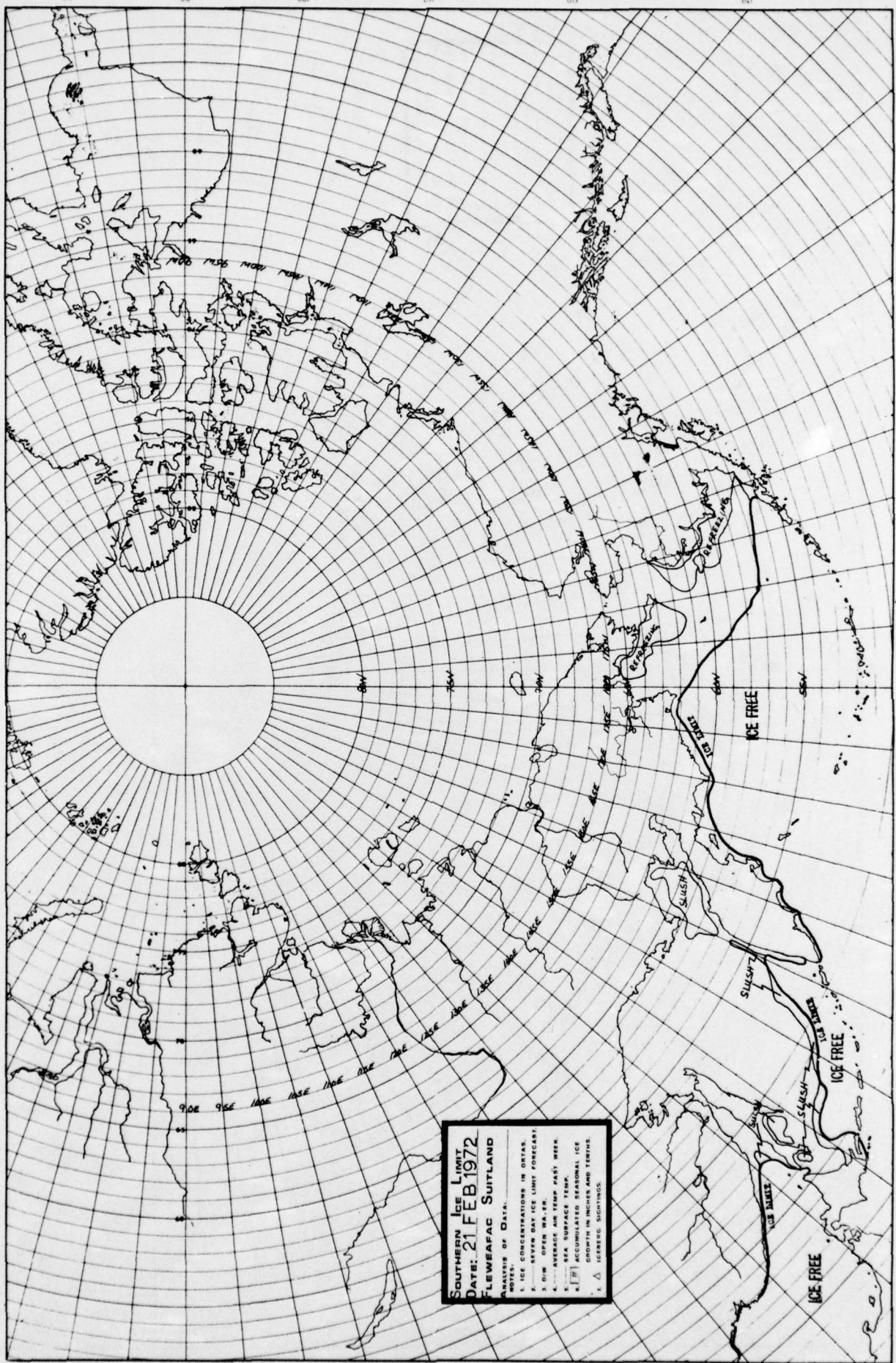


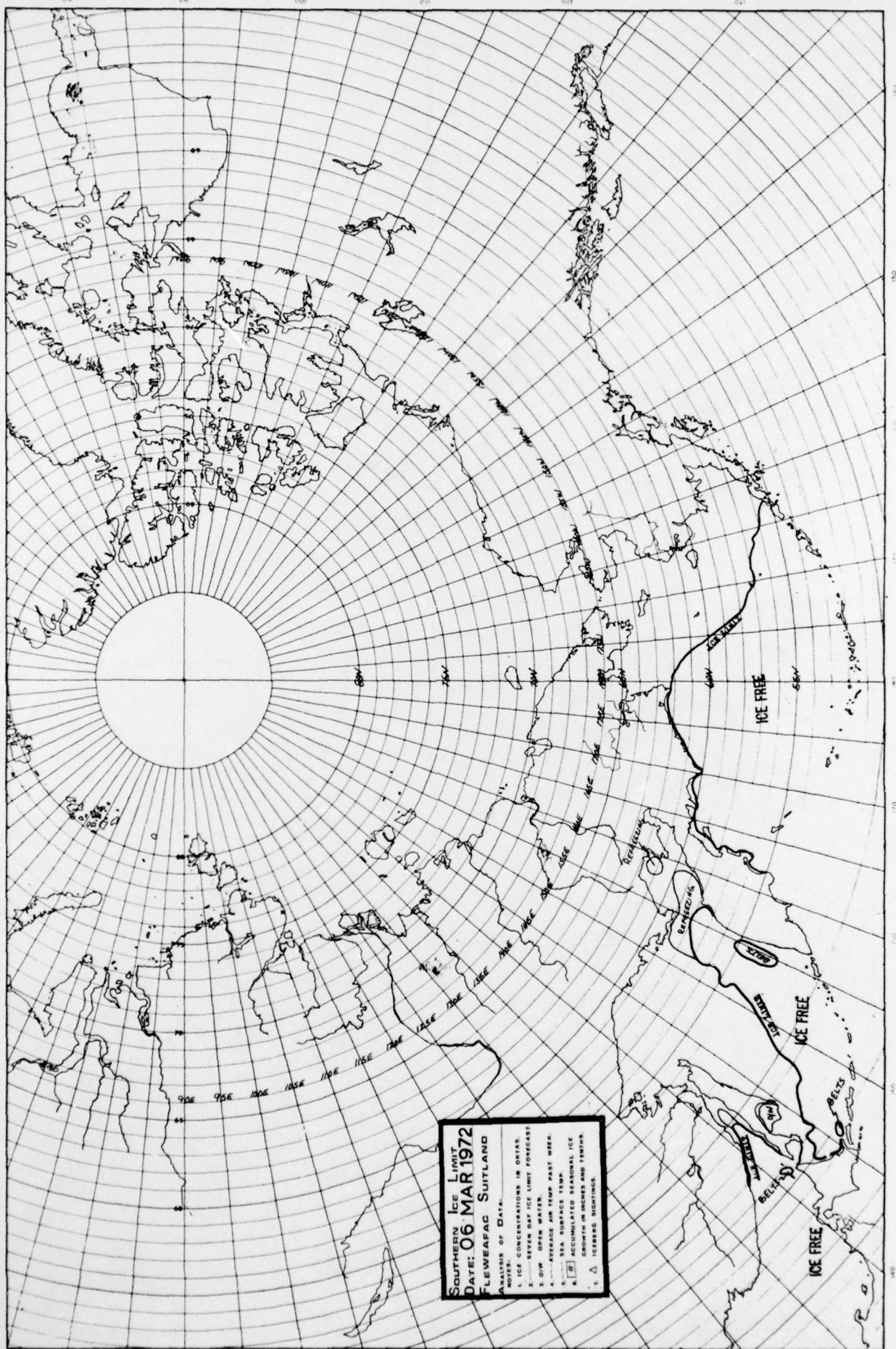


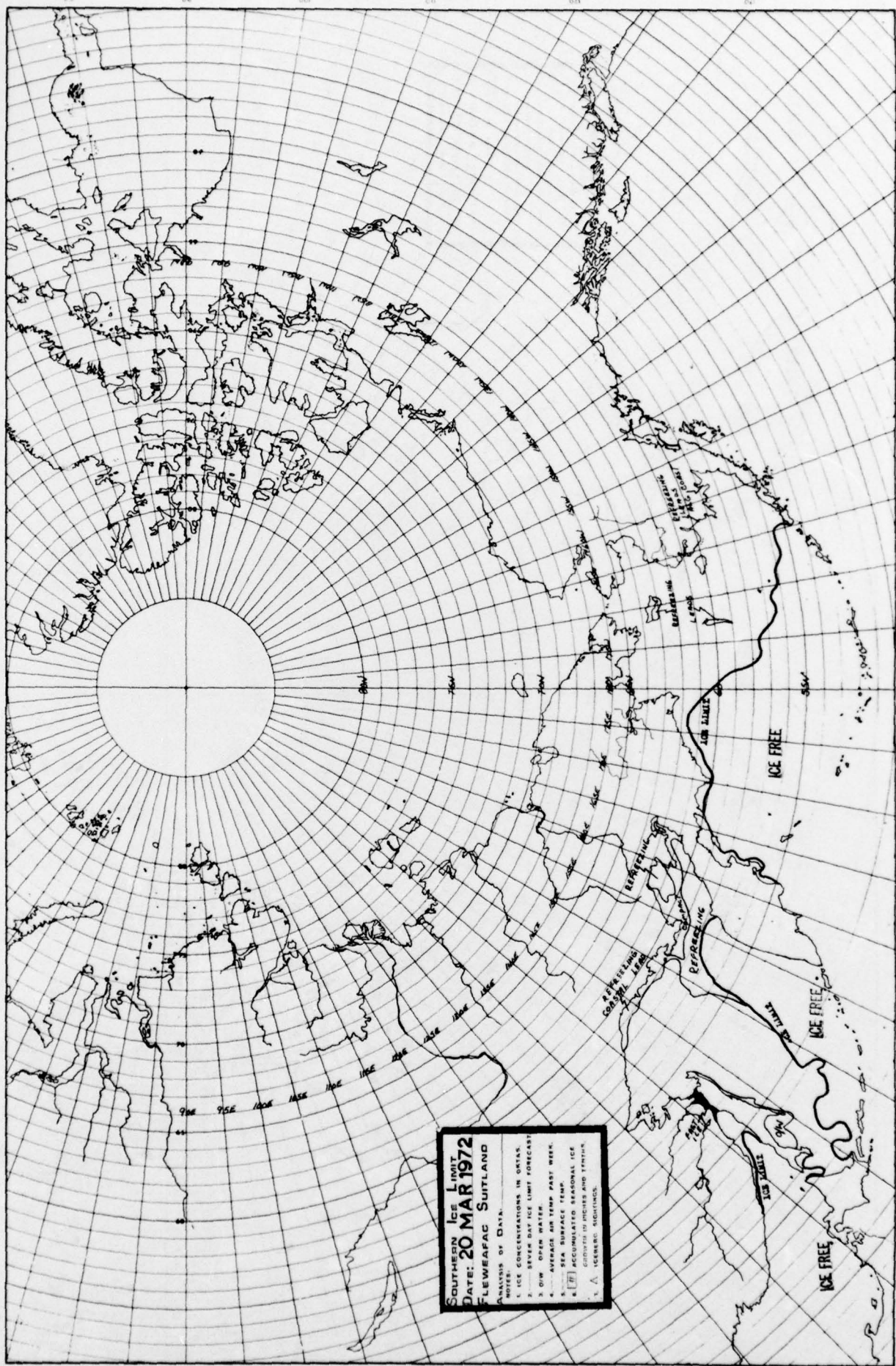


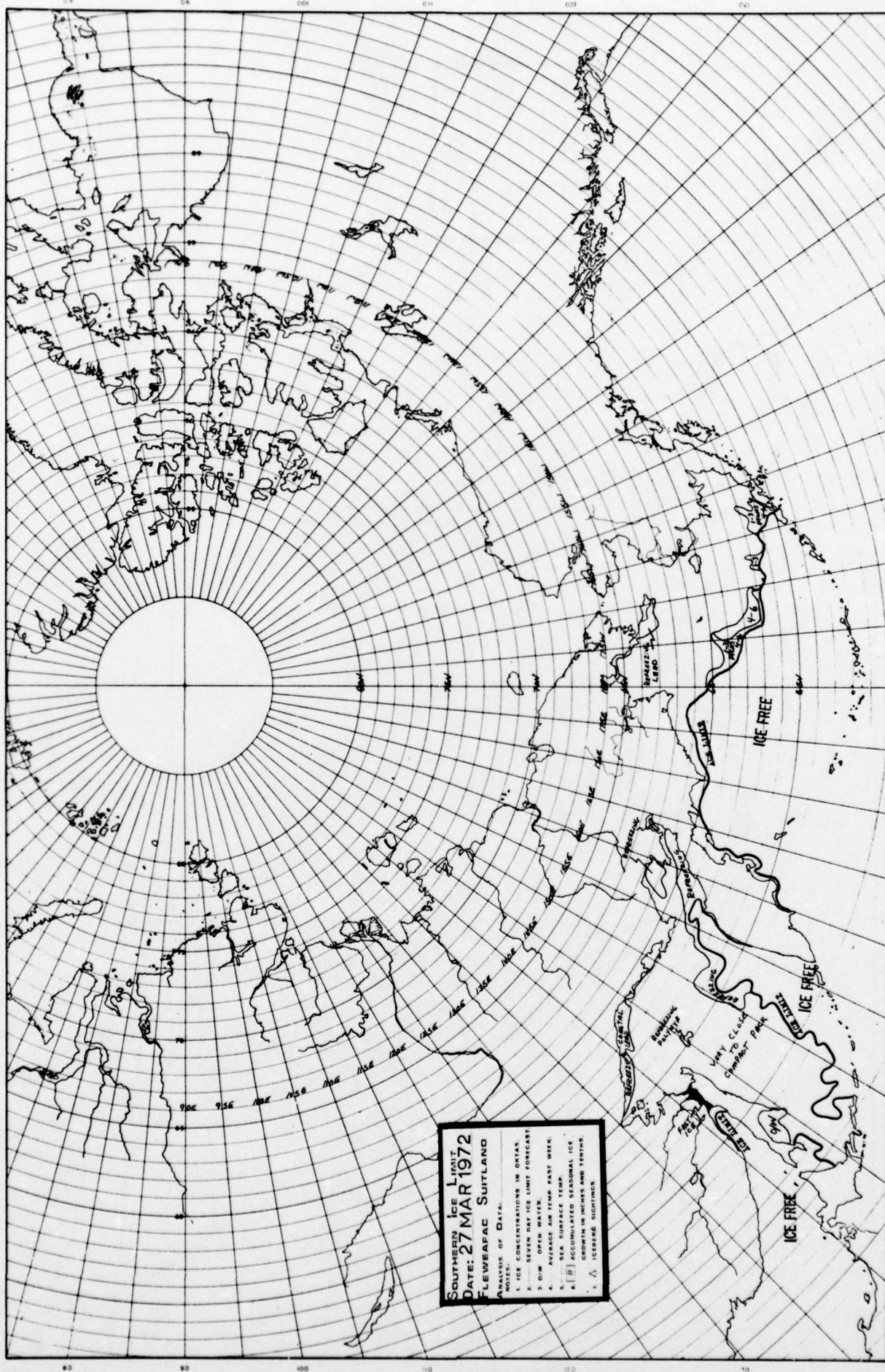


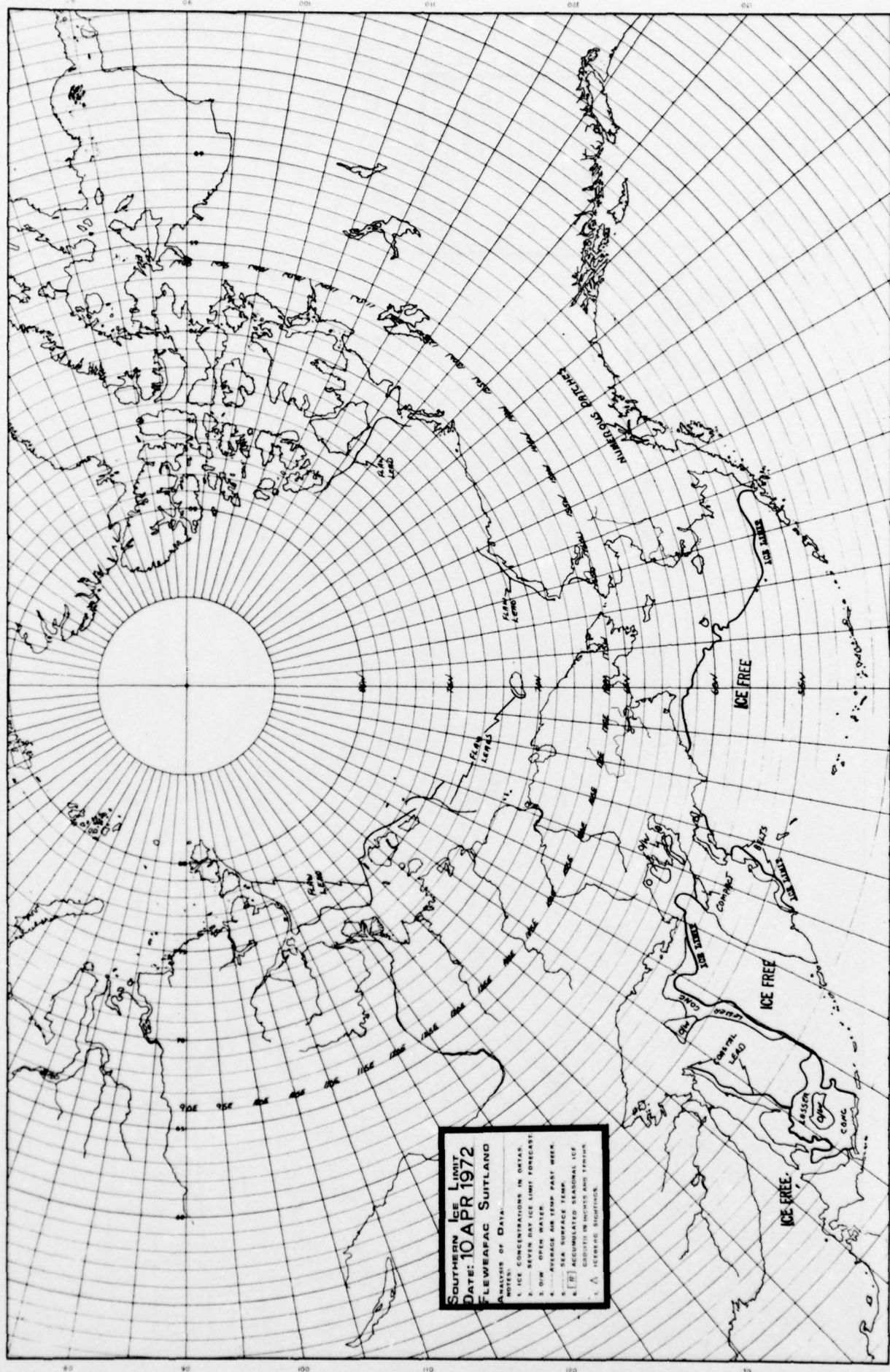


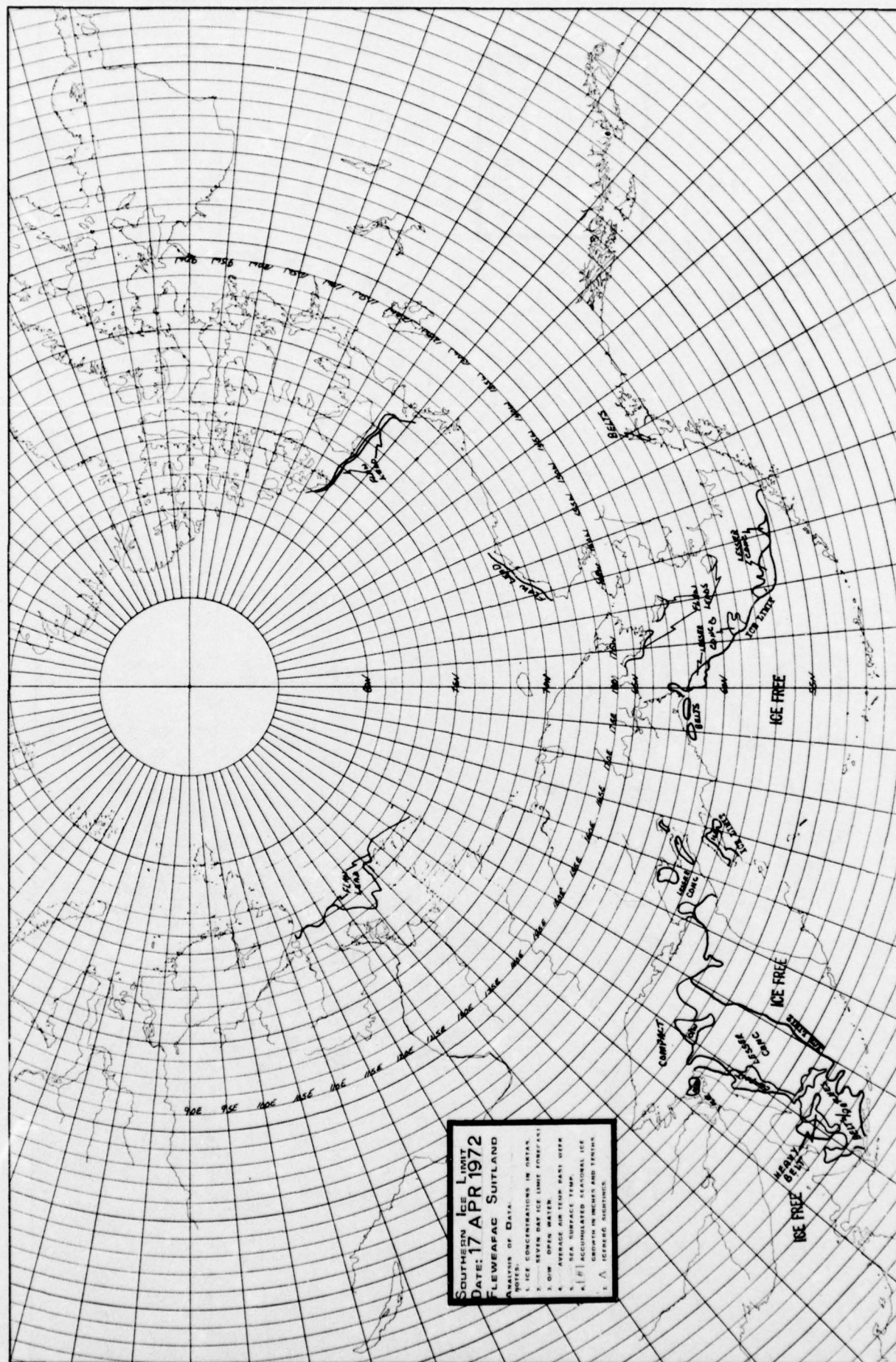


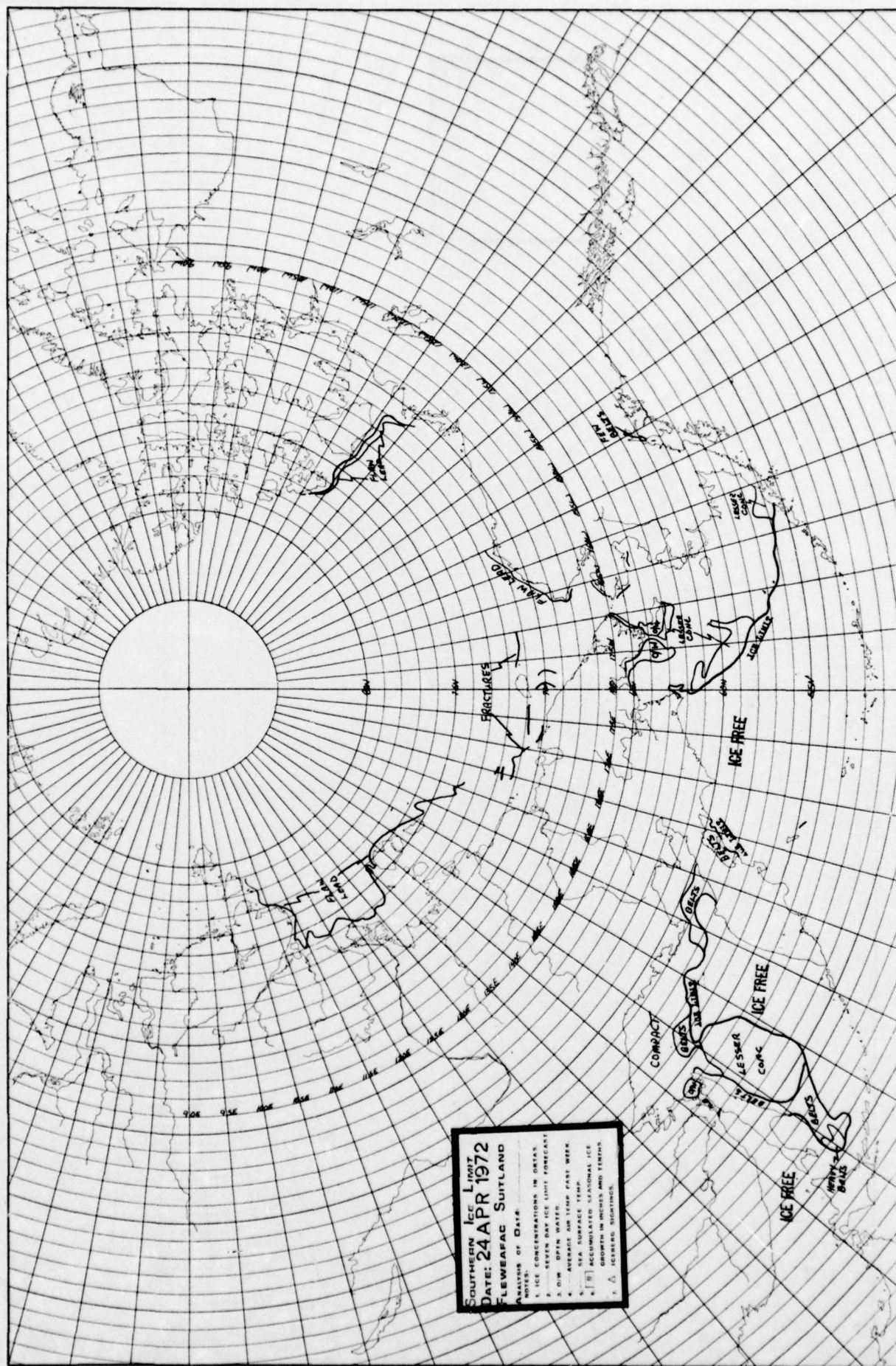


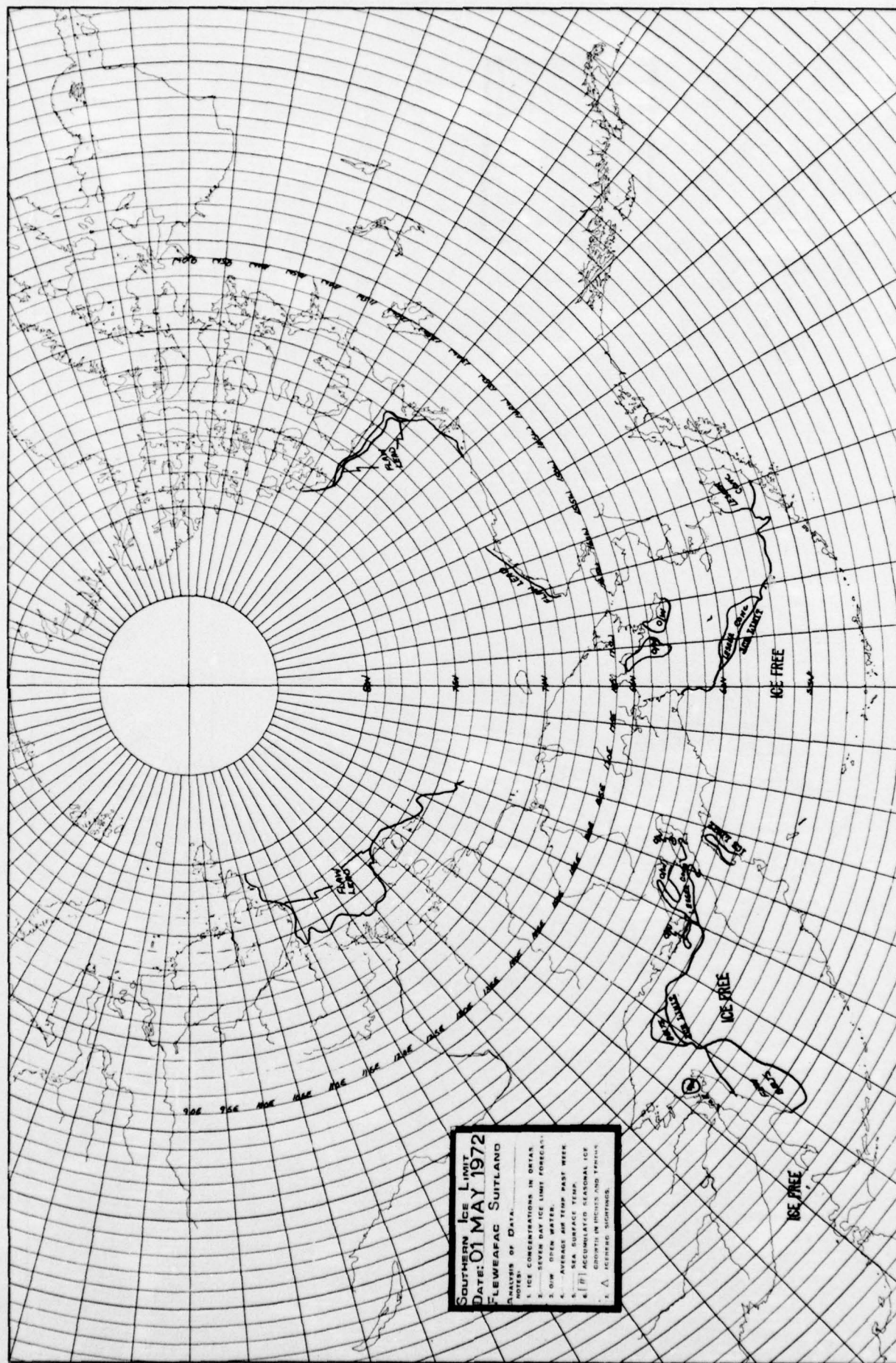


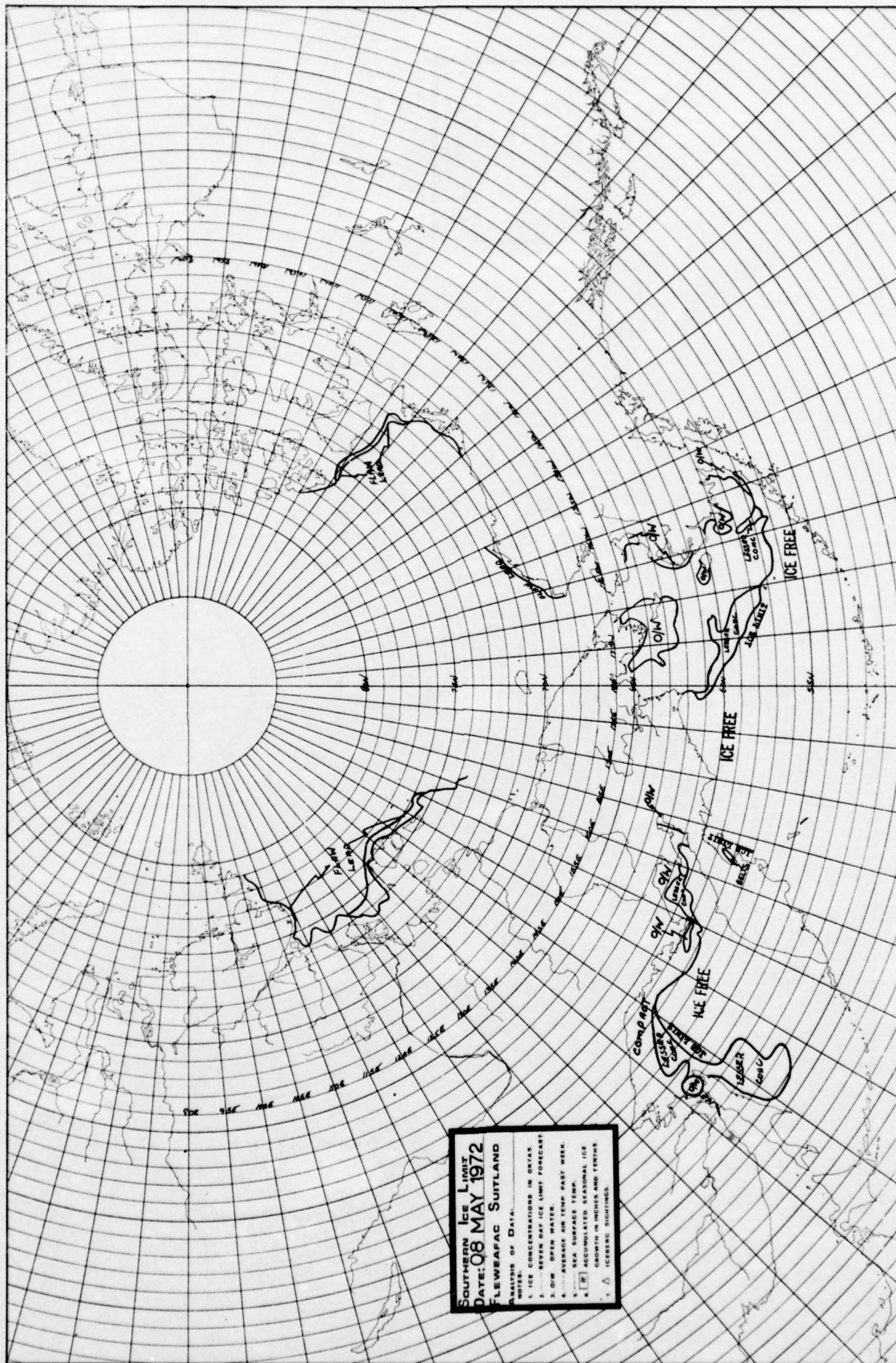


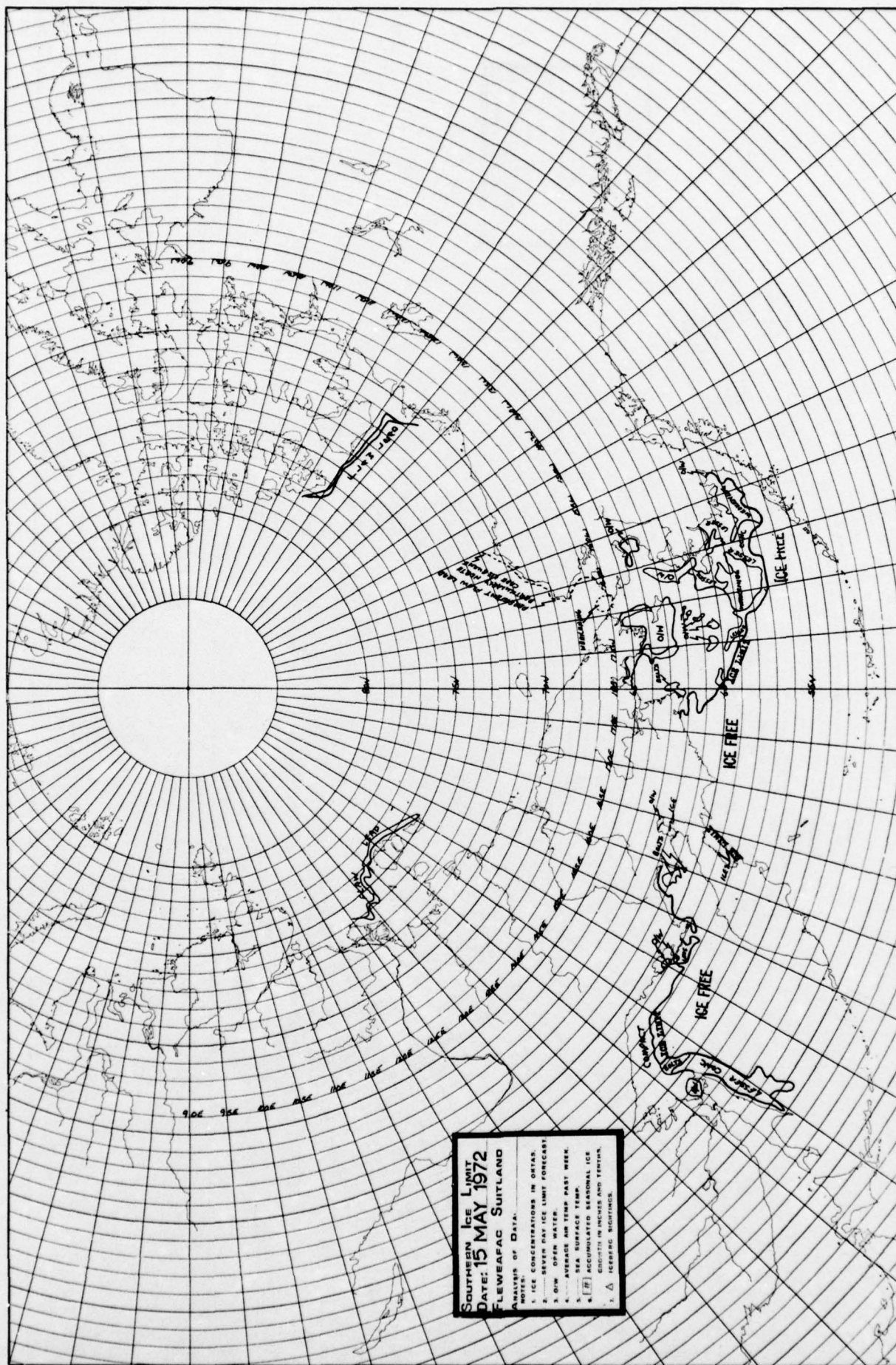


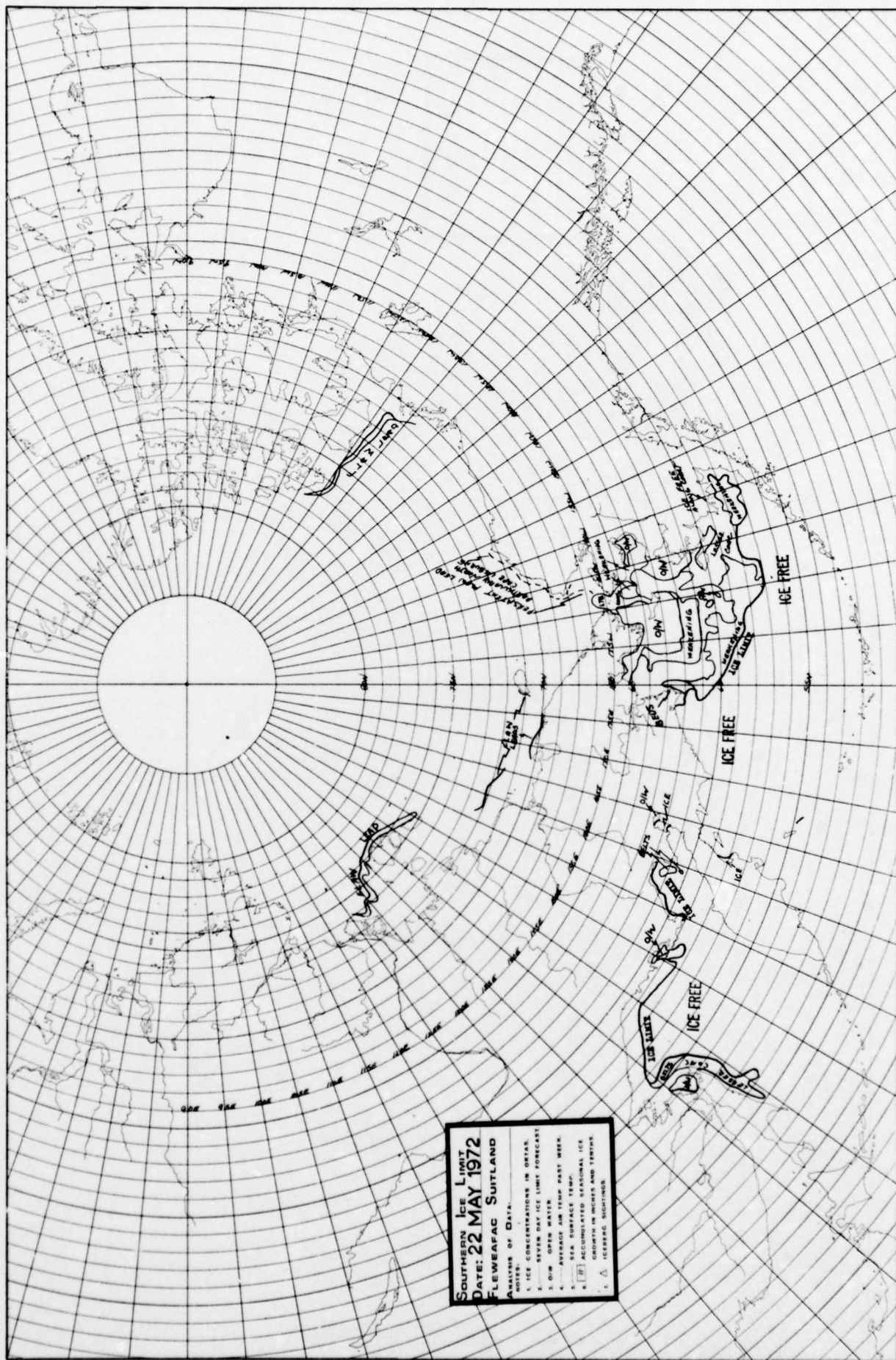


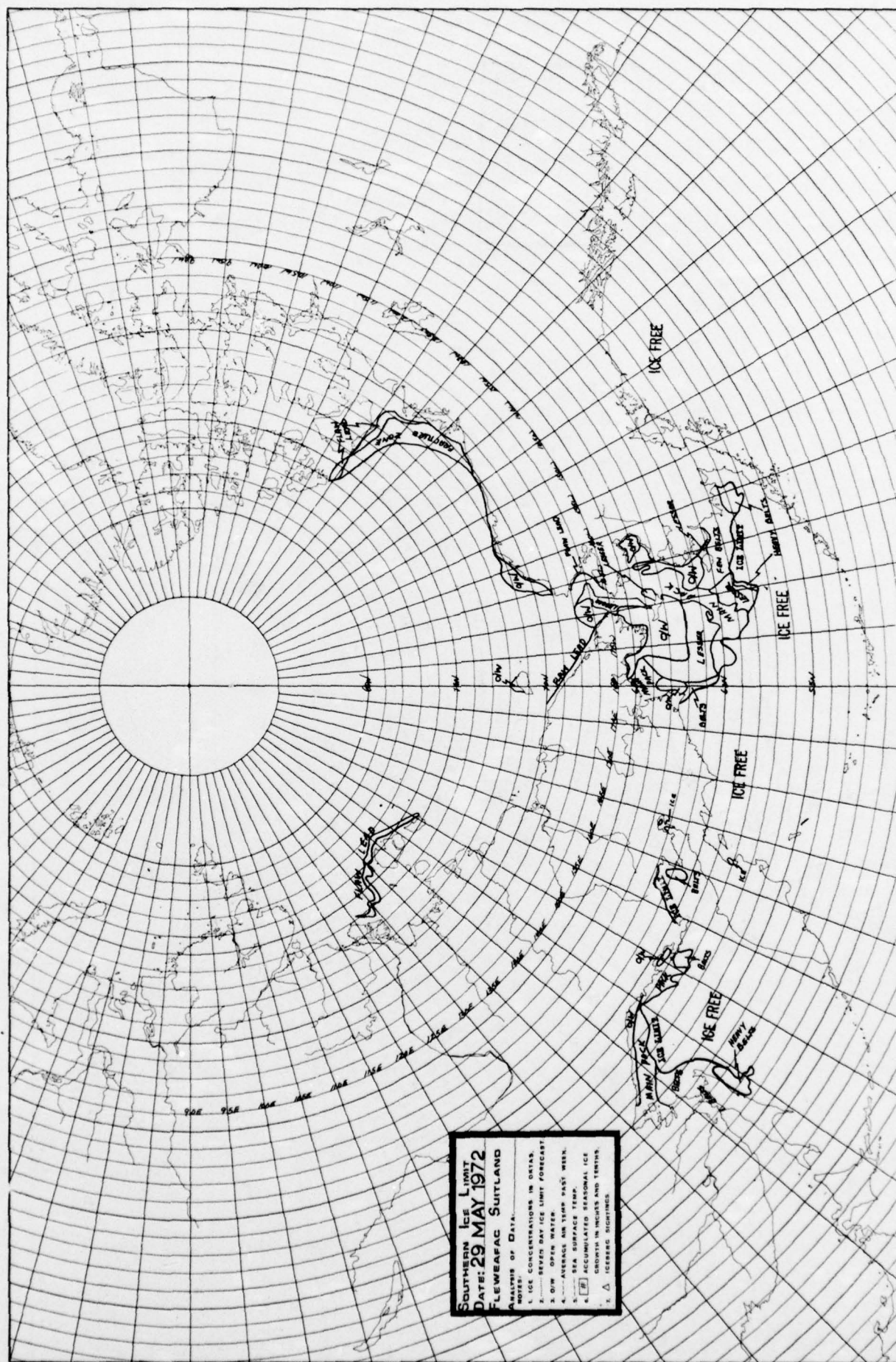


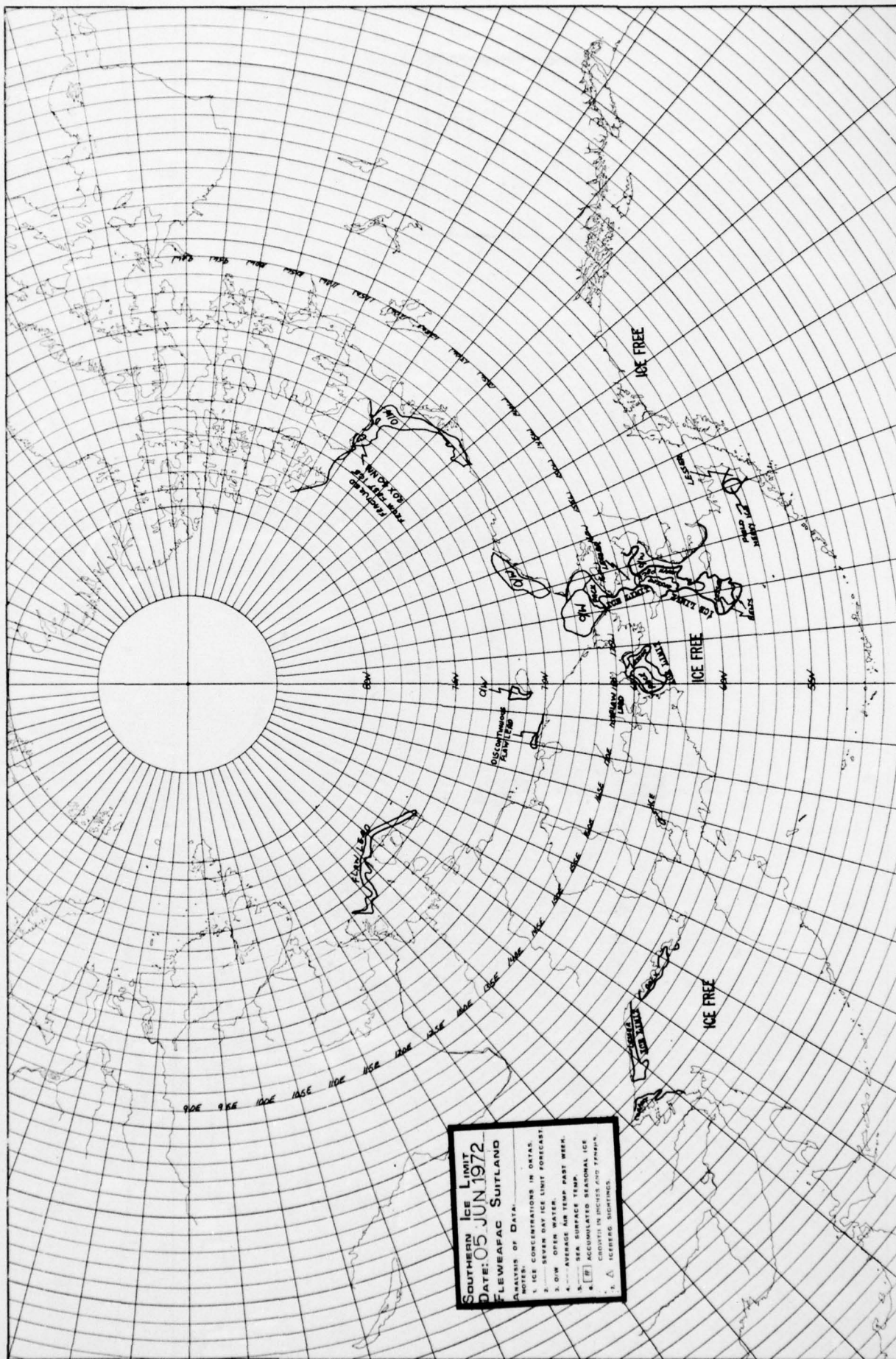


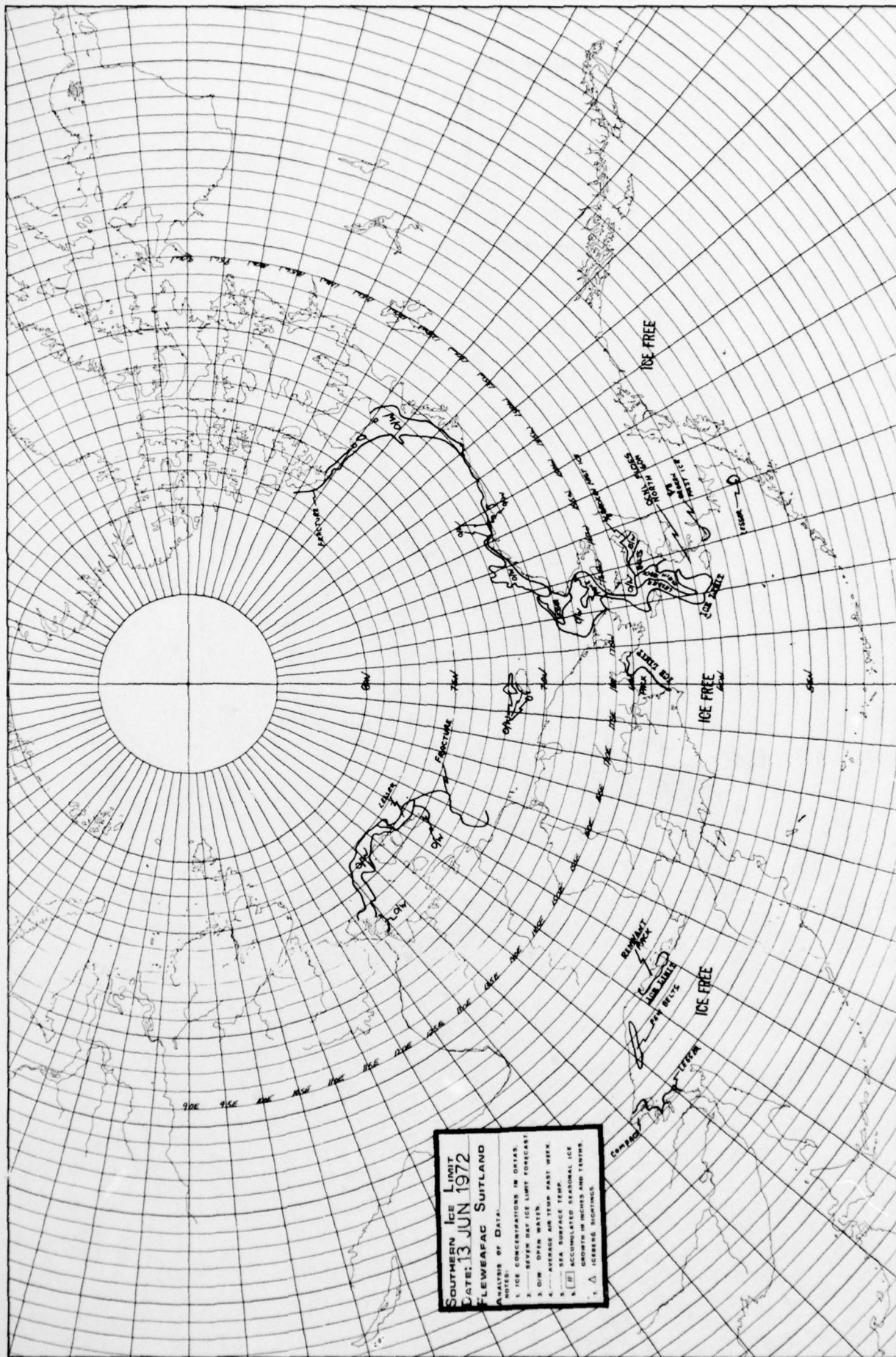


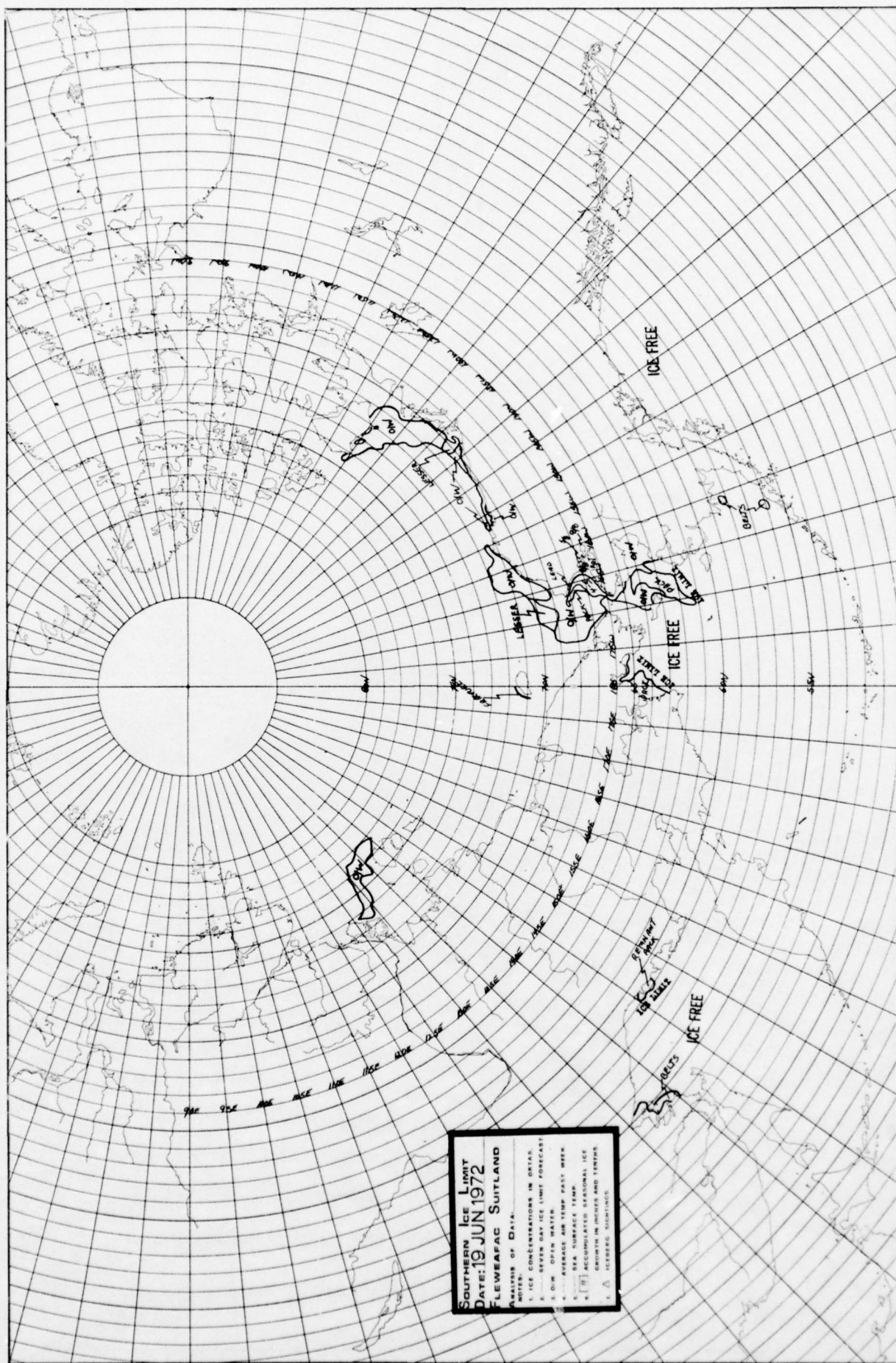


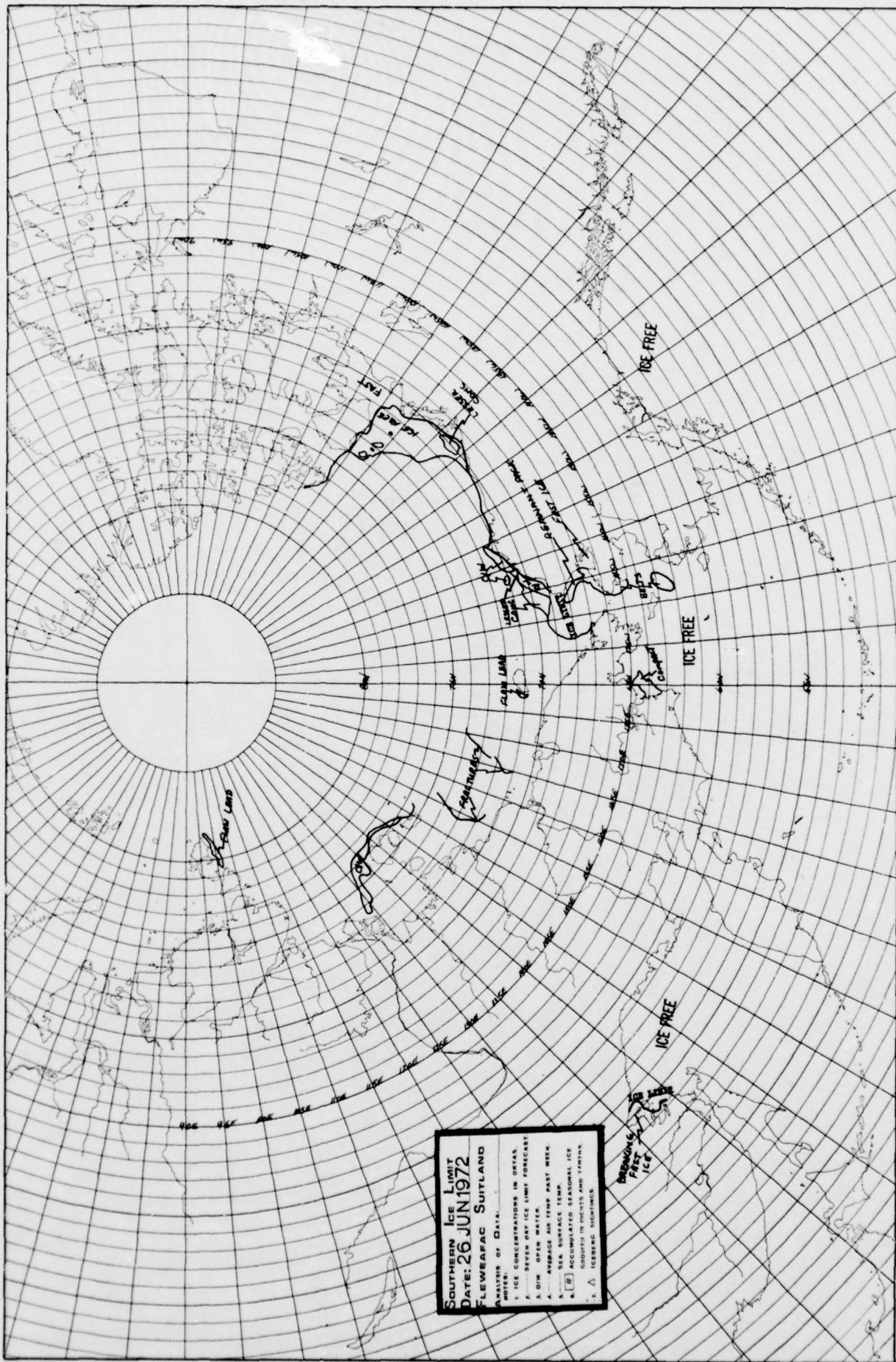


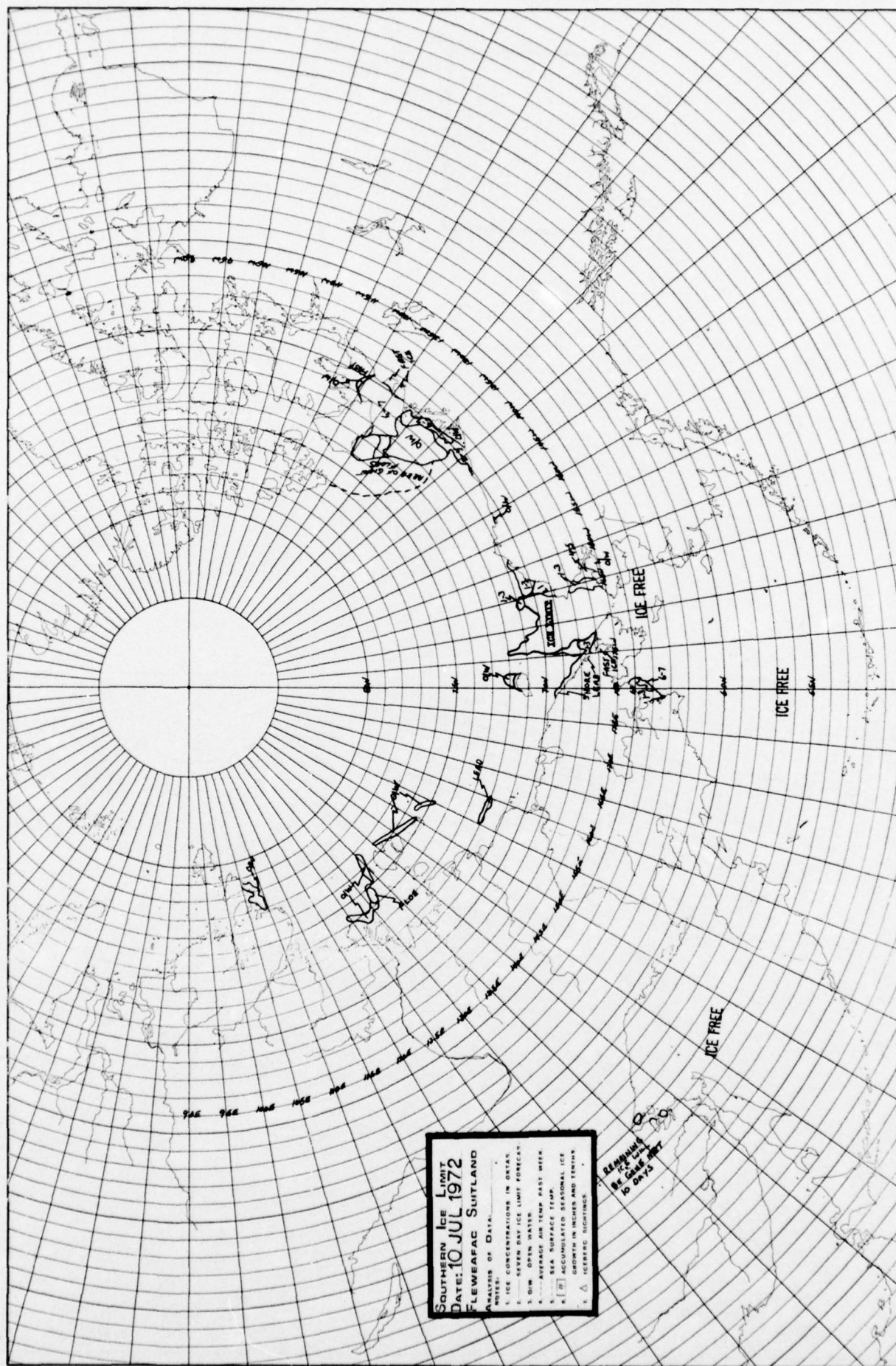


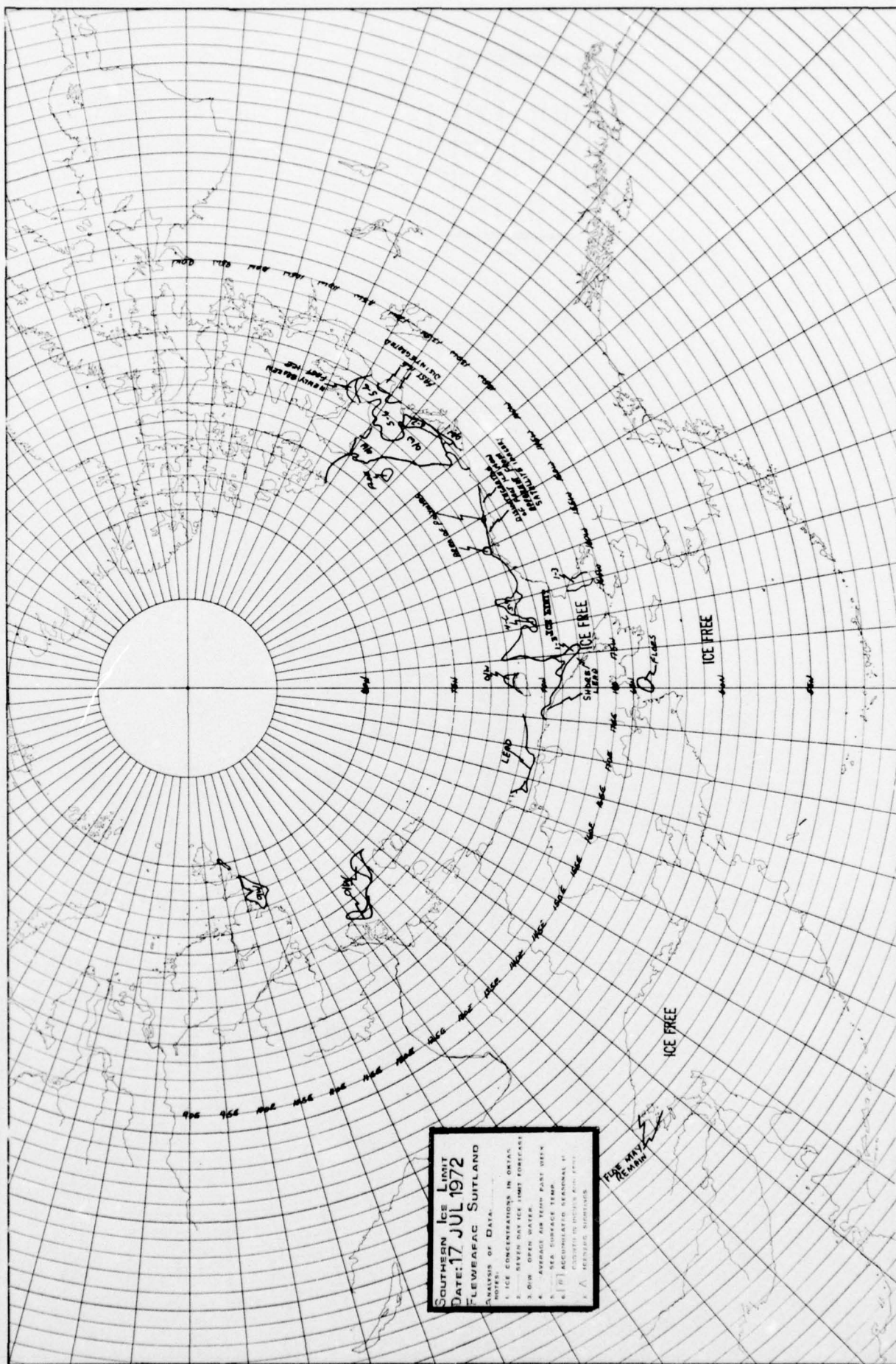


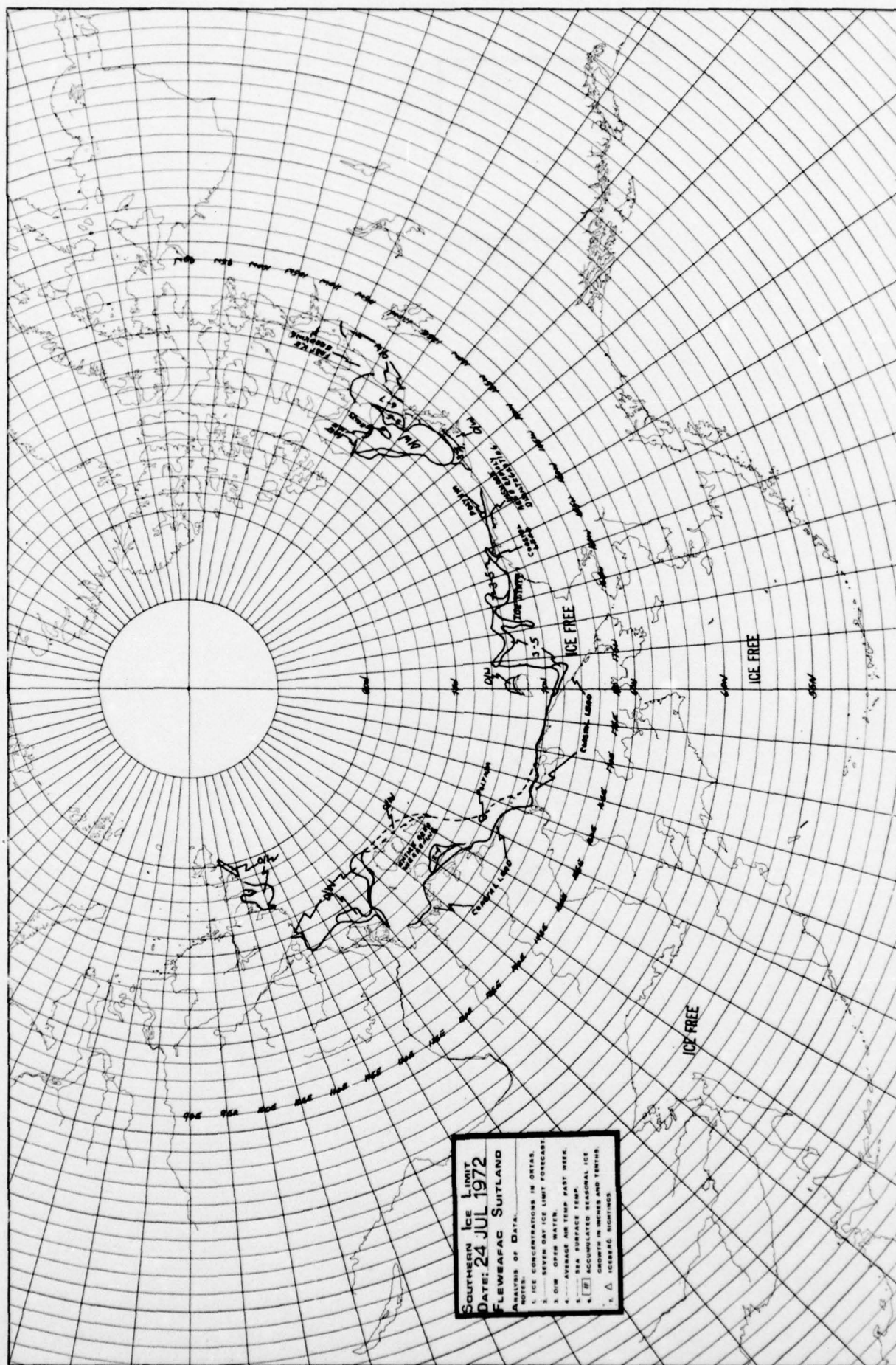


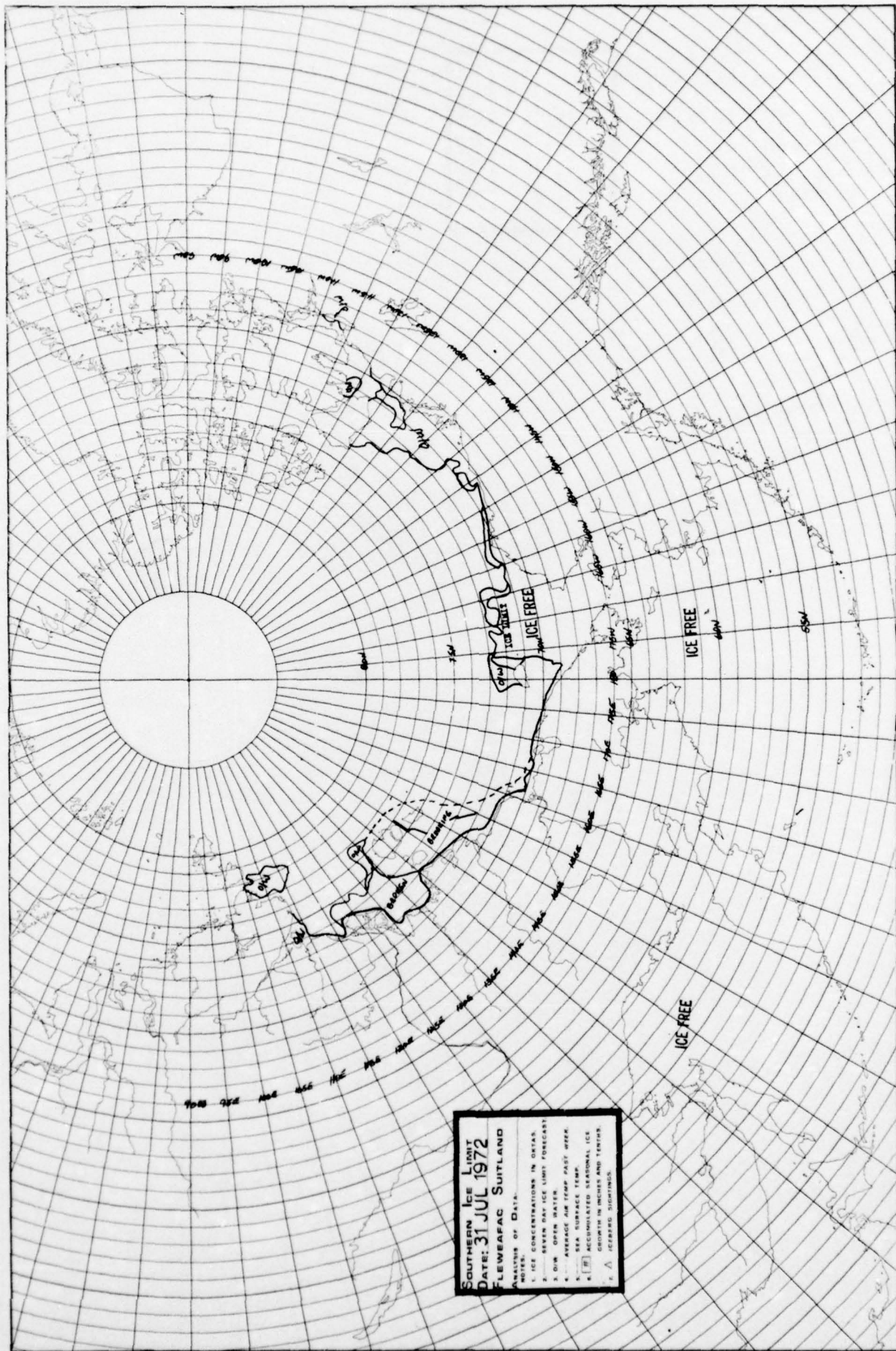








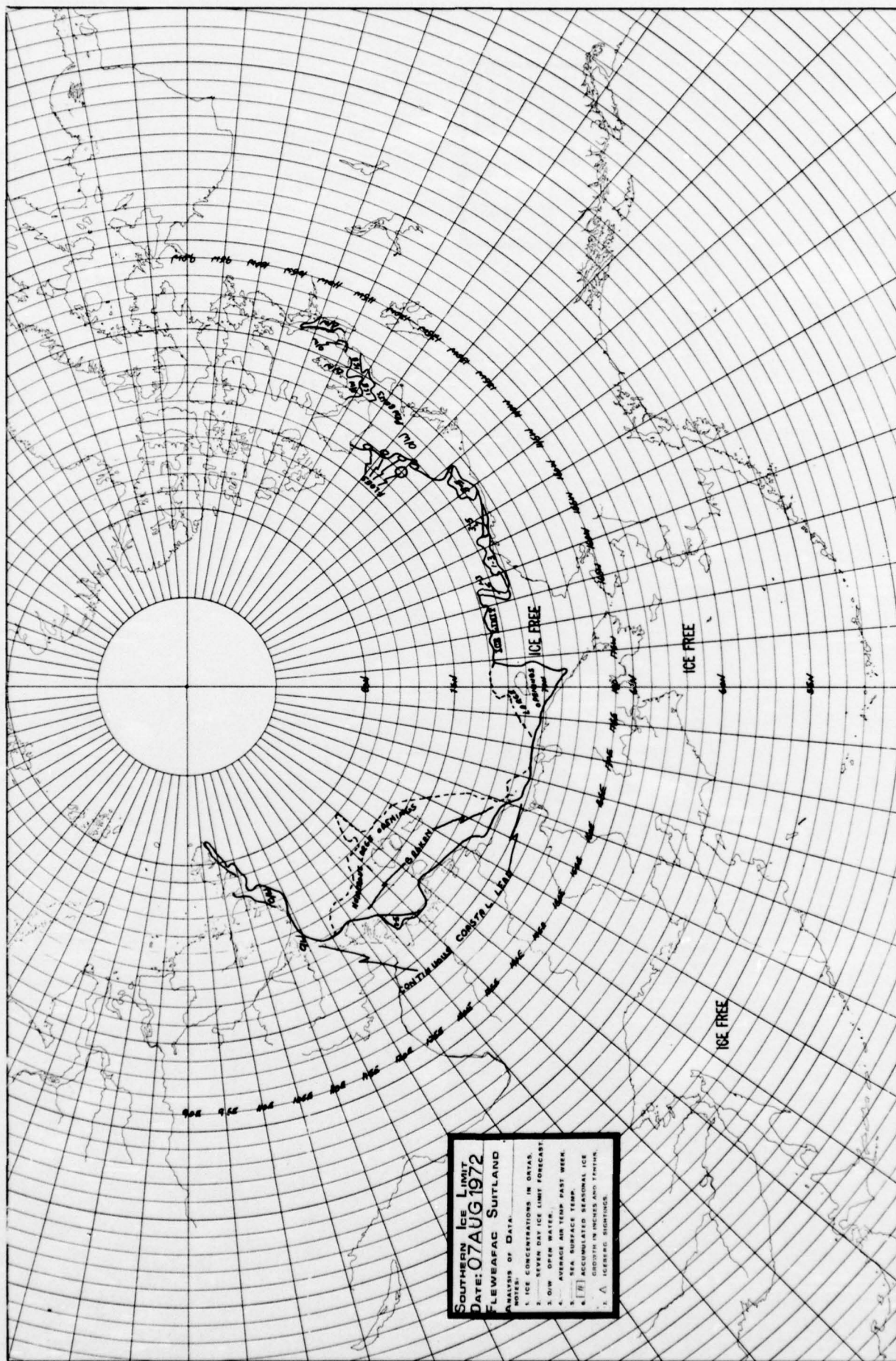


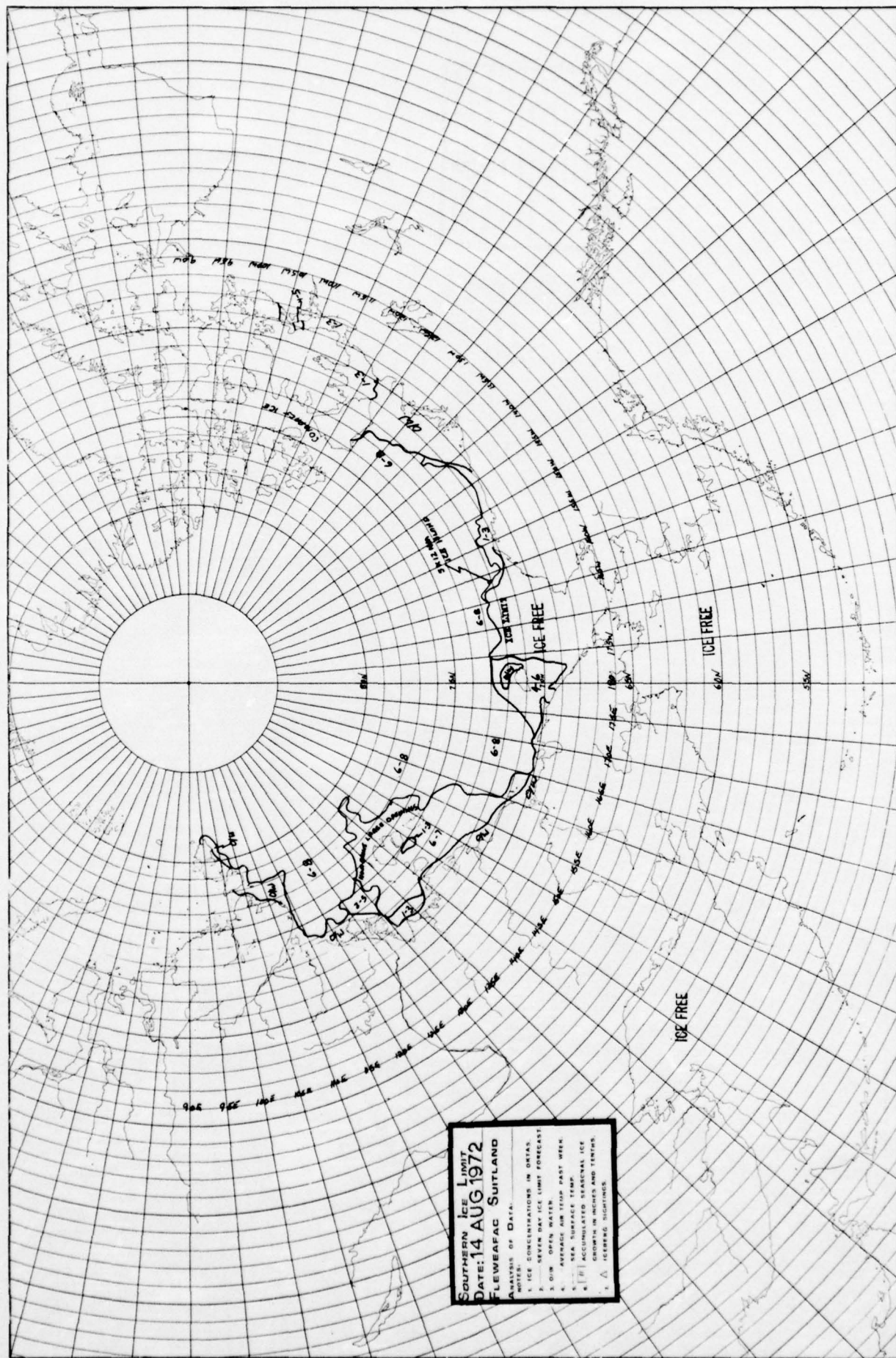


SOUTHERN ICE LIMIT
DATE: 31 JUL 1972
FLEWEAFAC SUTLAND

SOURCE OF DATA:

- 1. ICE CONCENTRATIONS IN ORBITAL
- 2. SEVEN DAY ICE LIMIT FORECAST
- 3. DIM OPEN WATER
- 4. AVERAGE AIR TEMP PAST WEEK
- 5. SEA SURFACE TEMP
- 6. ACCUMULATED SEASONAL ICE GROWTH IN DEGREES AND TENTHS
- 7. ICEBERG SIGHTINGS

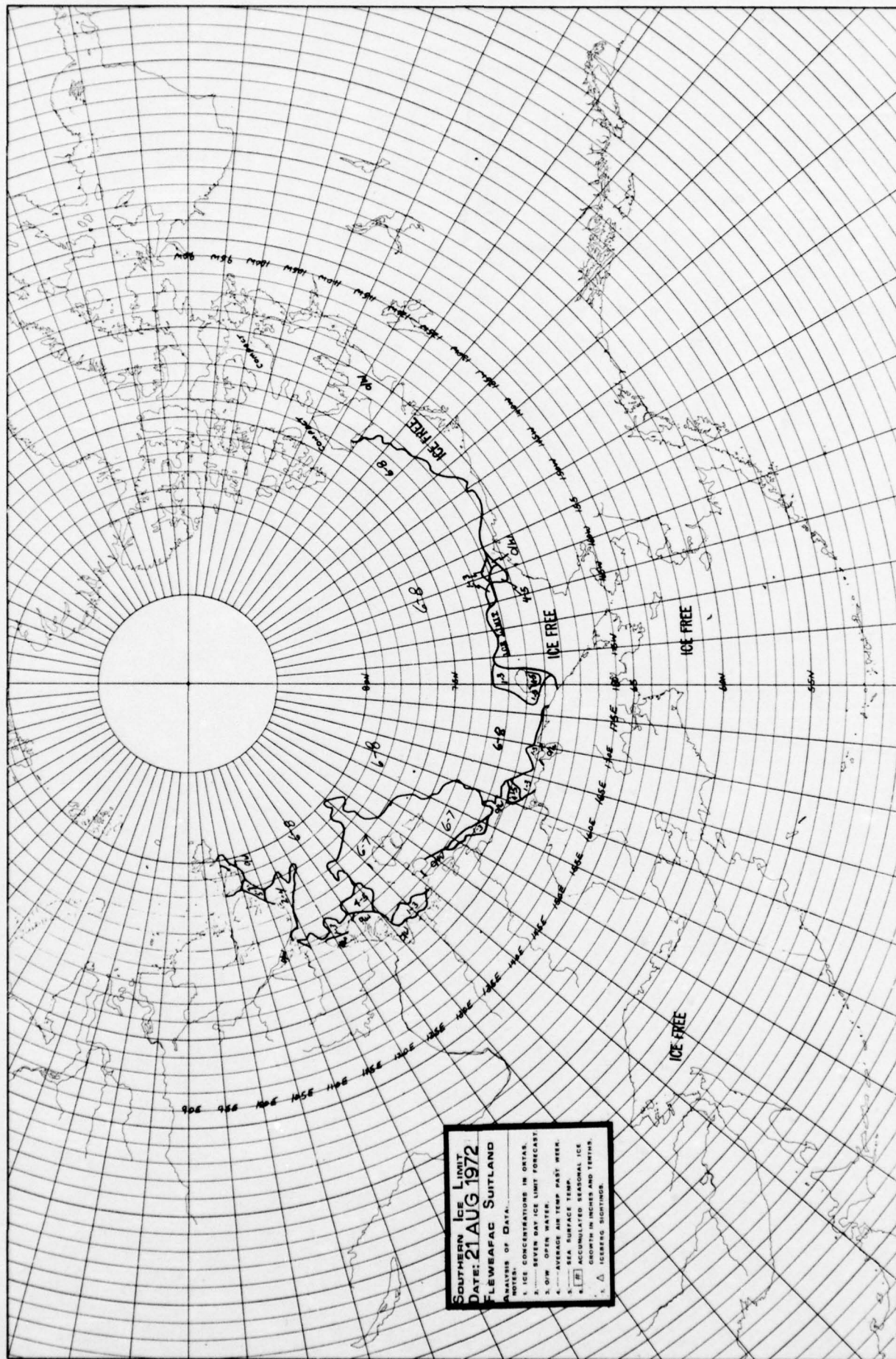


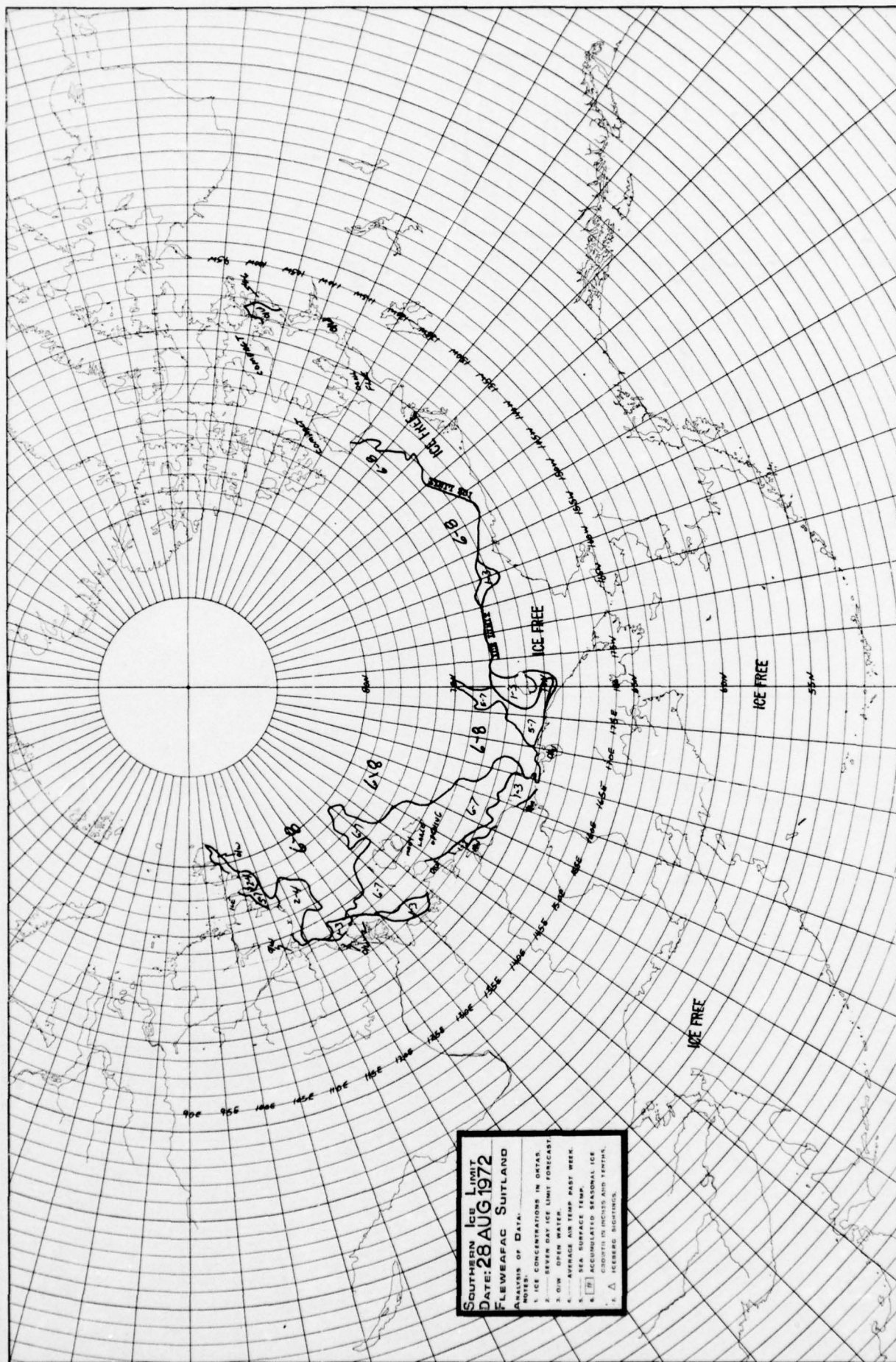


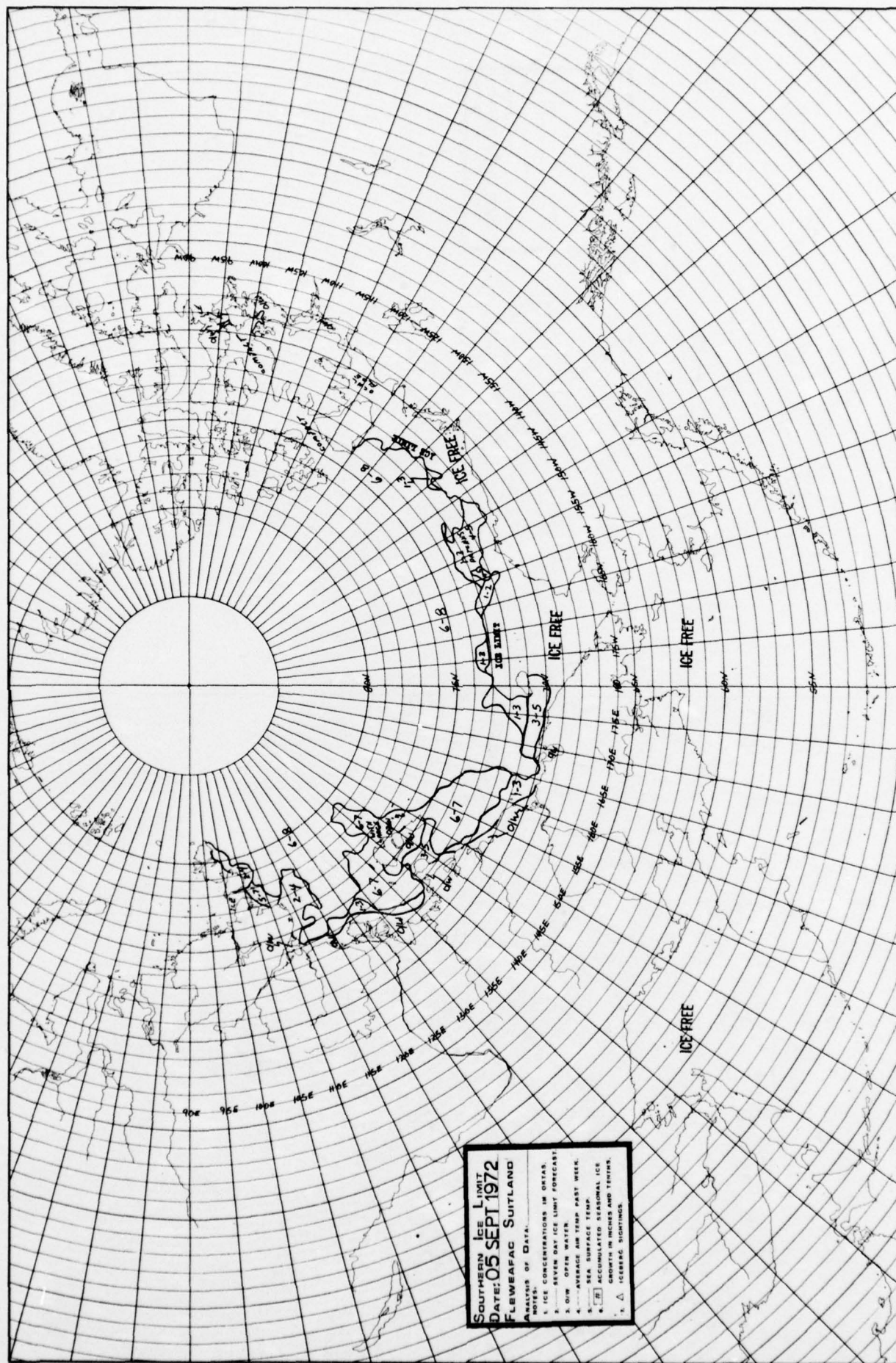
SOUTHERN ICE LIMIT
DATE: 14 AUG 1972
FLEWEAFAC SUITLAND

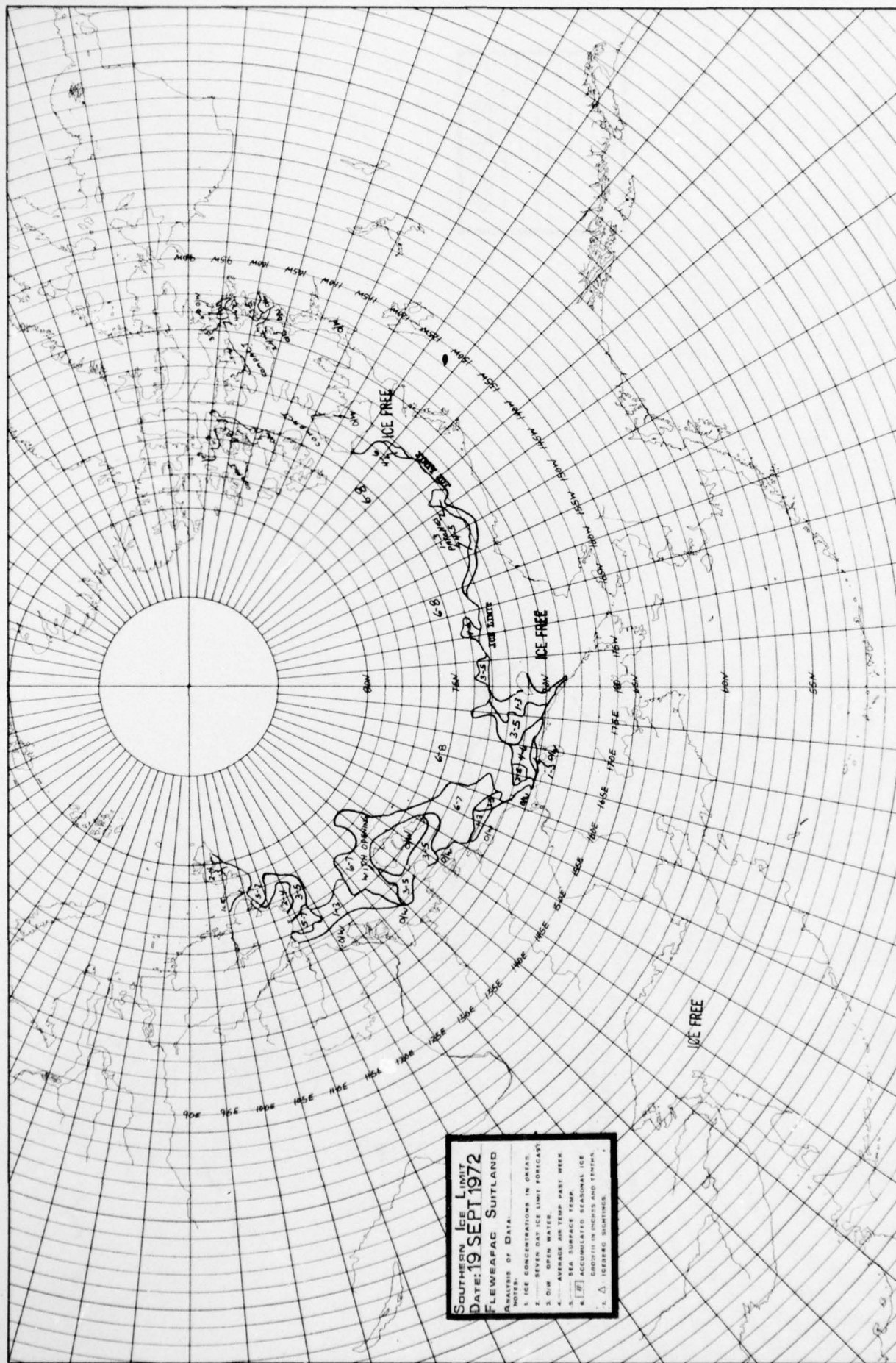
ANALYSIS OF DATA:

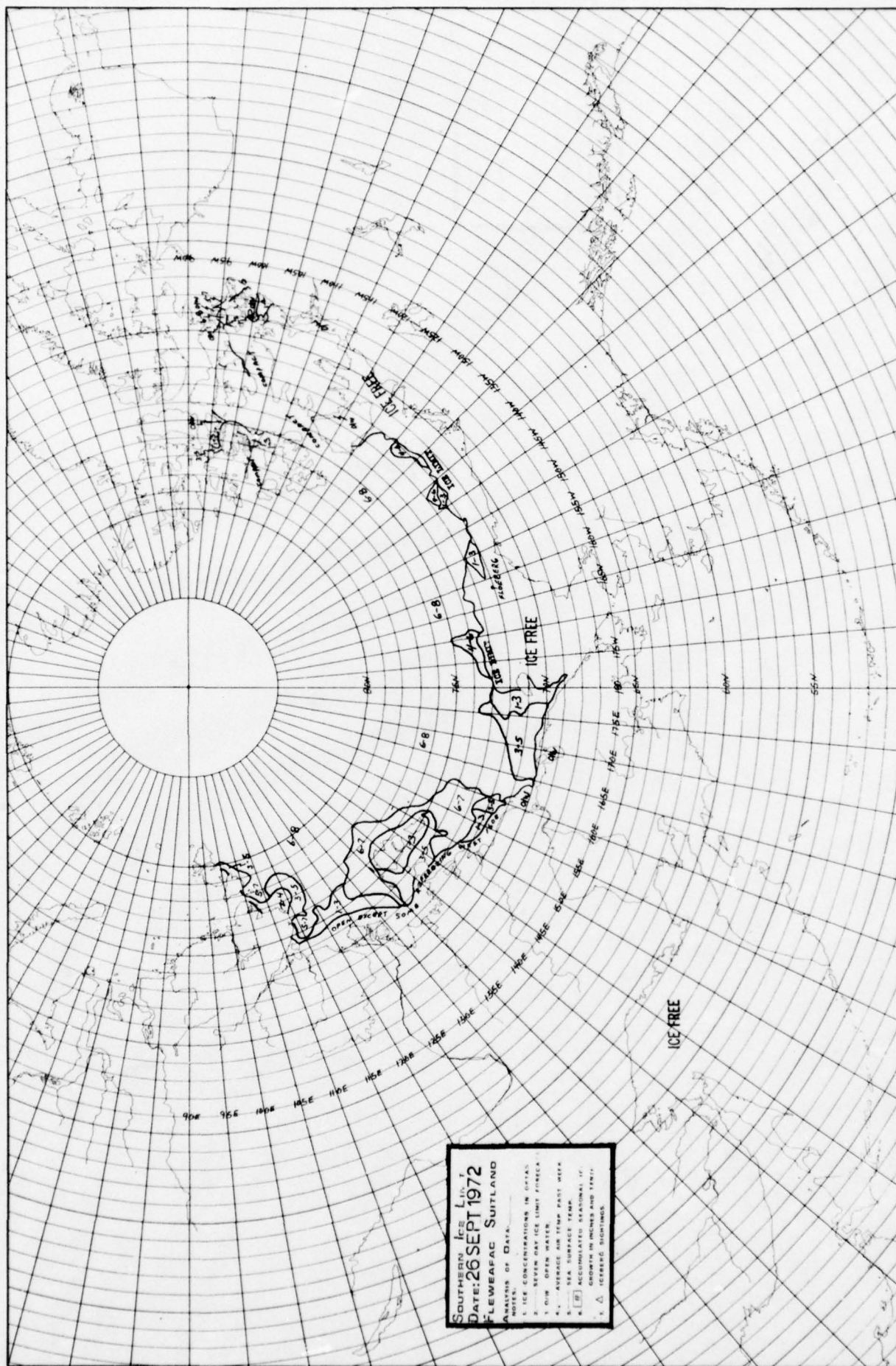
1. ICE CONCENTRATIONS IN ORALS
 2. SEVEN DAY ICE LIMIT FORECAST
 3. DIM. OPEN WATER
 4. AVERAGE AIR TEMP LAST WEEK
 5. SEA SURFACE TEMPERATURE
 6. ICE CONCENTRATIONS IN SEAS AND TINTON
 7. ICEBERG SIGHTINGS

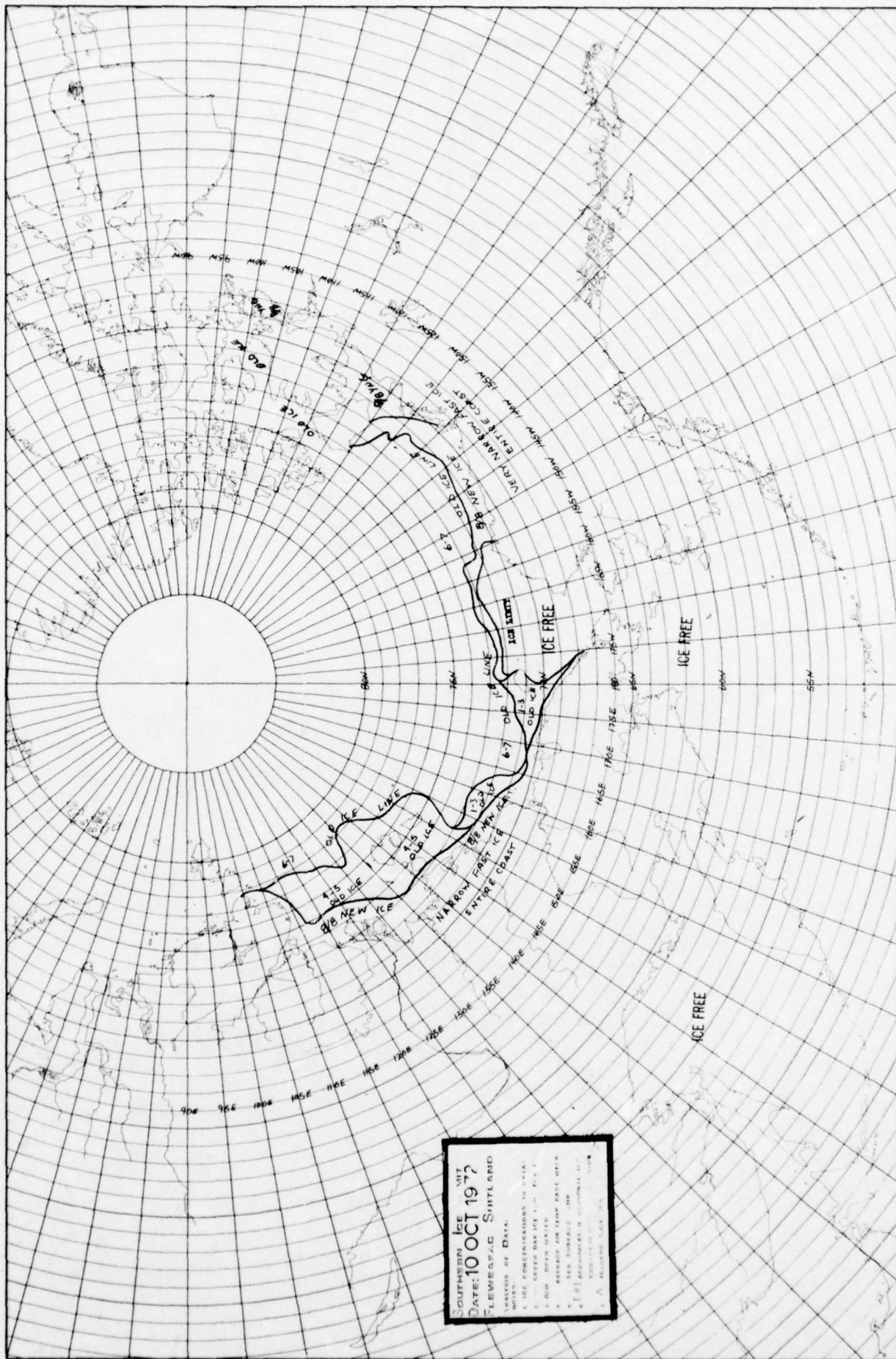


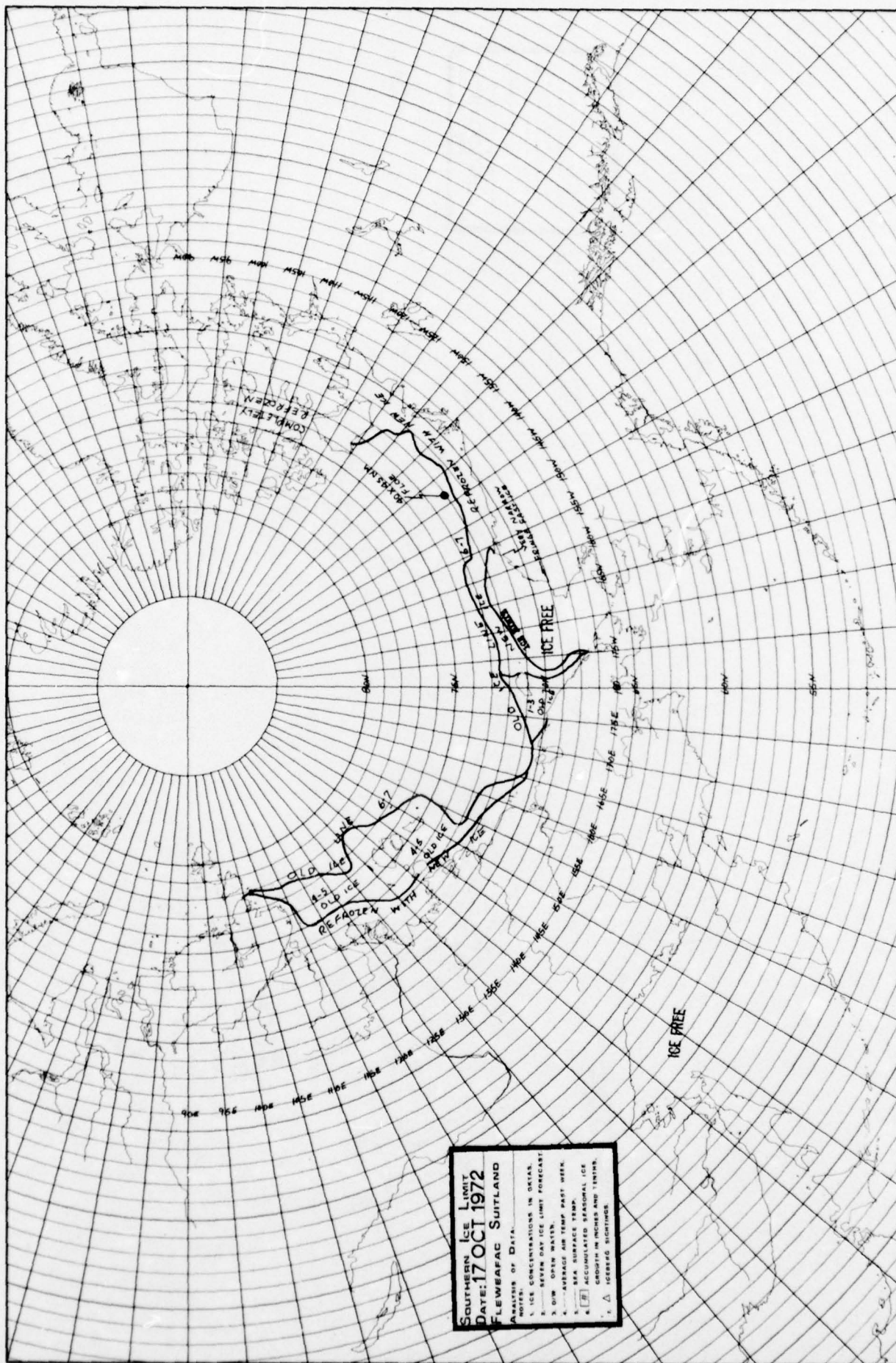


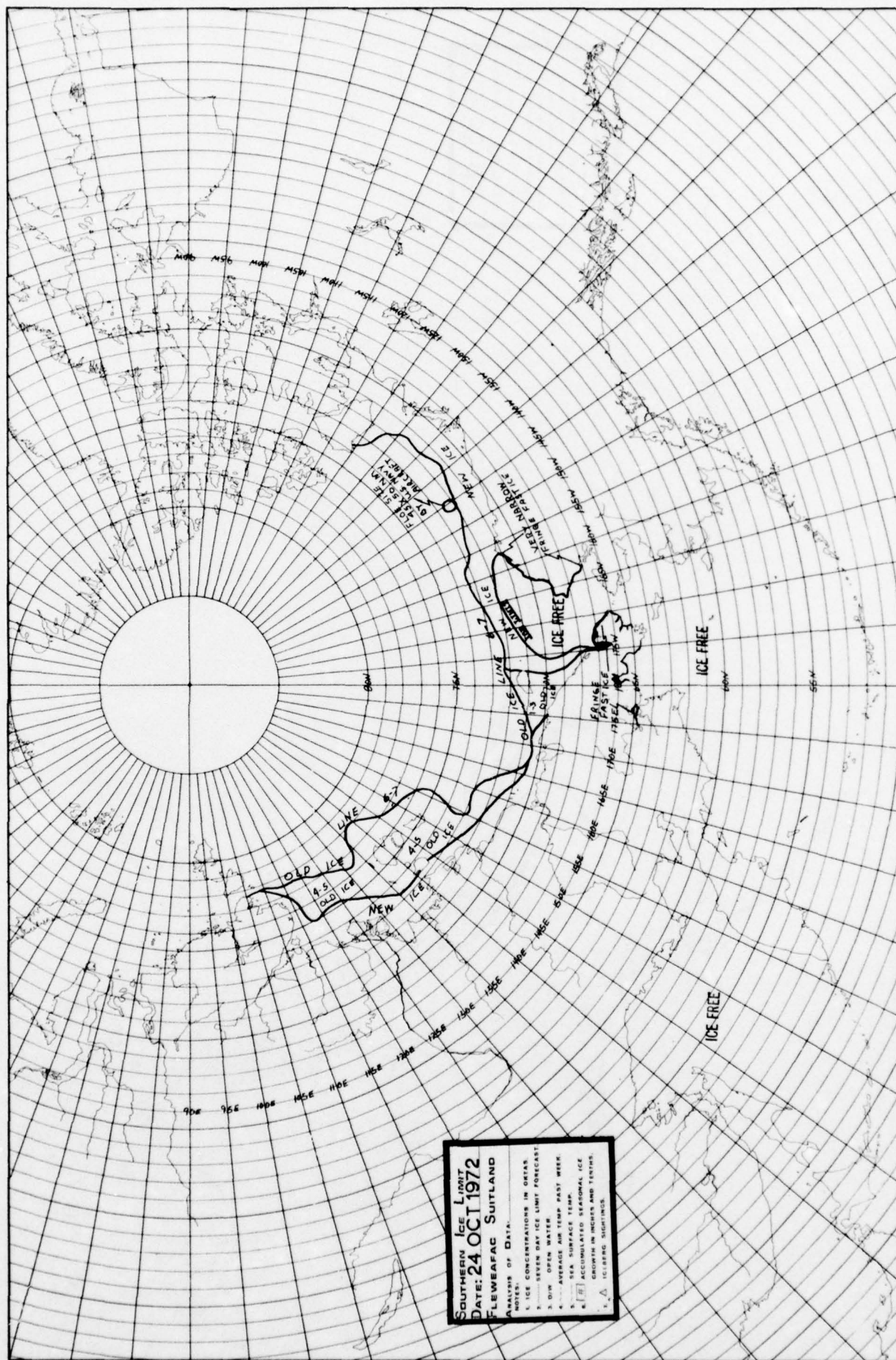


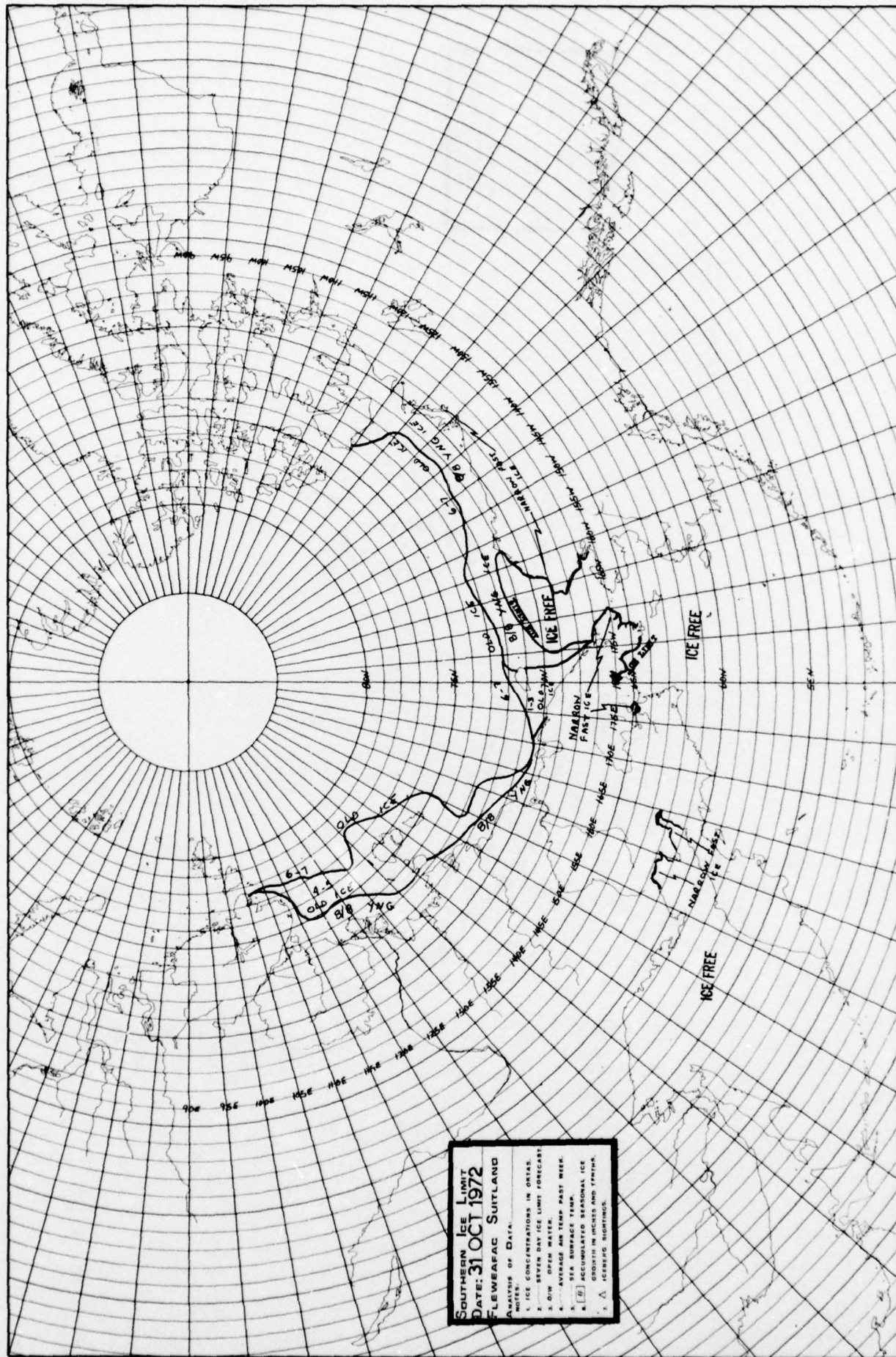


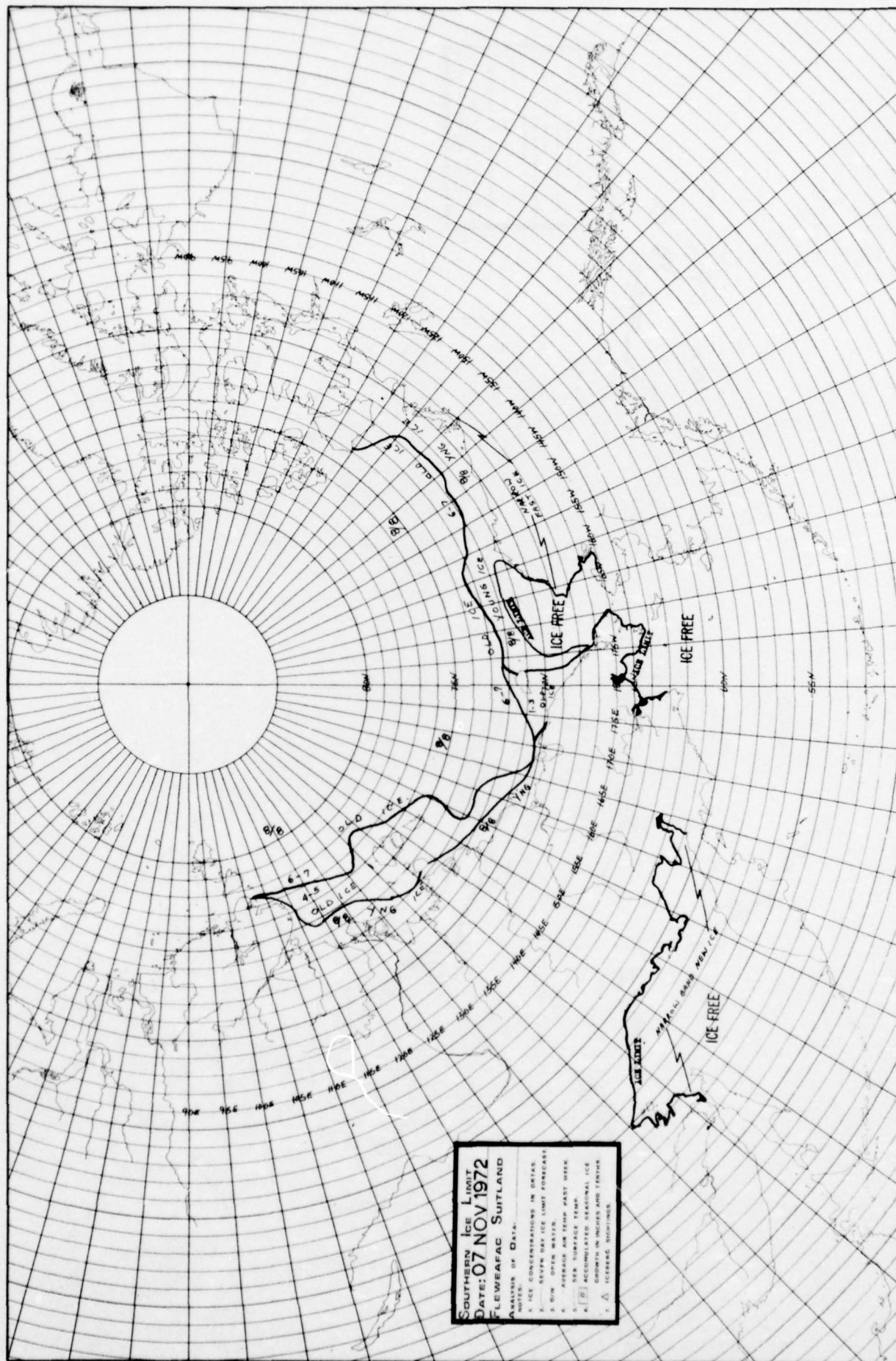


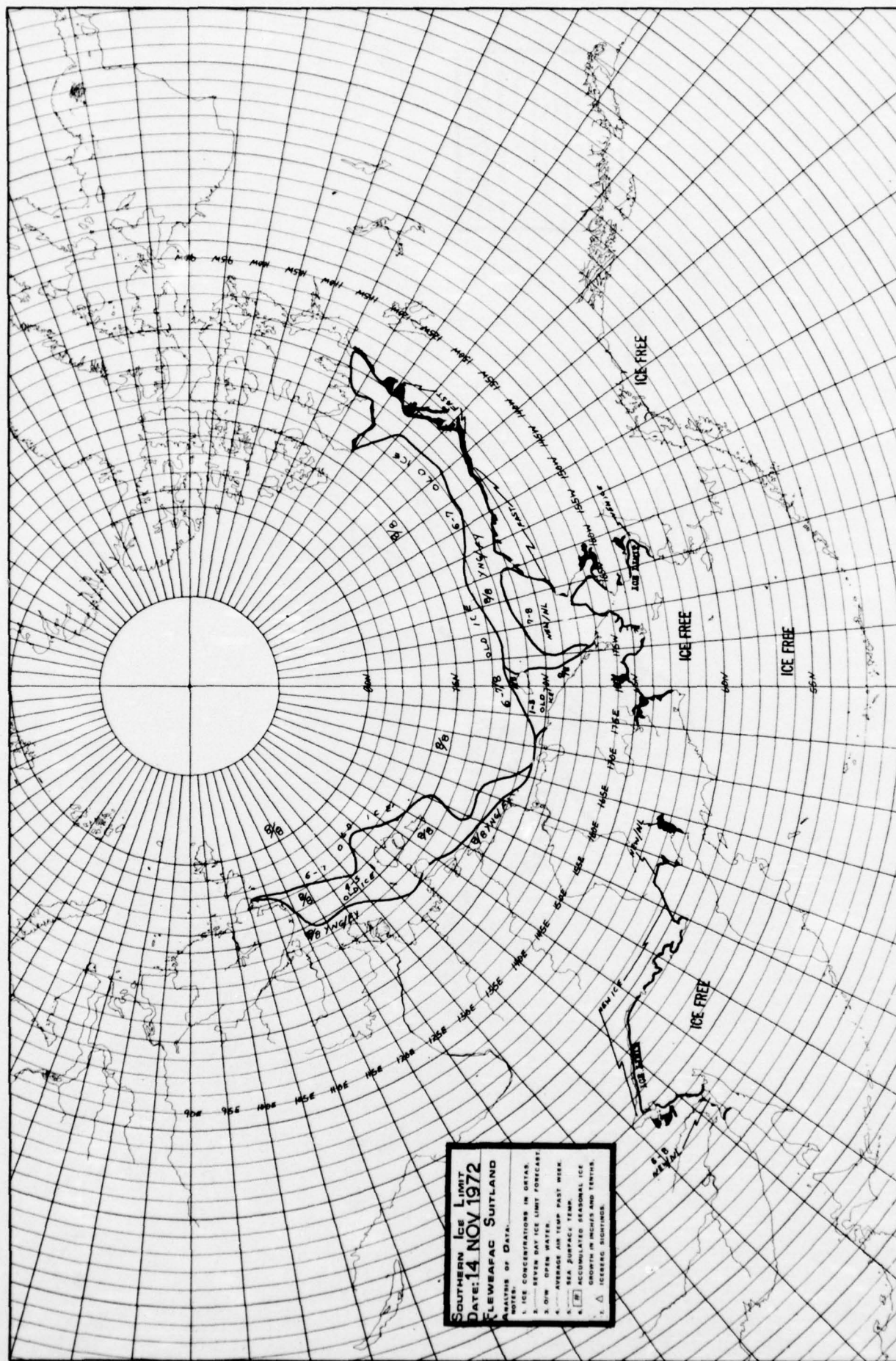


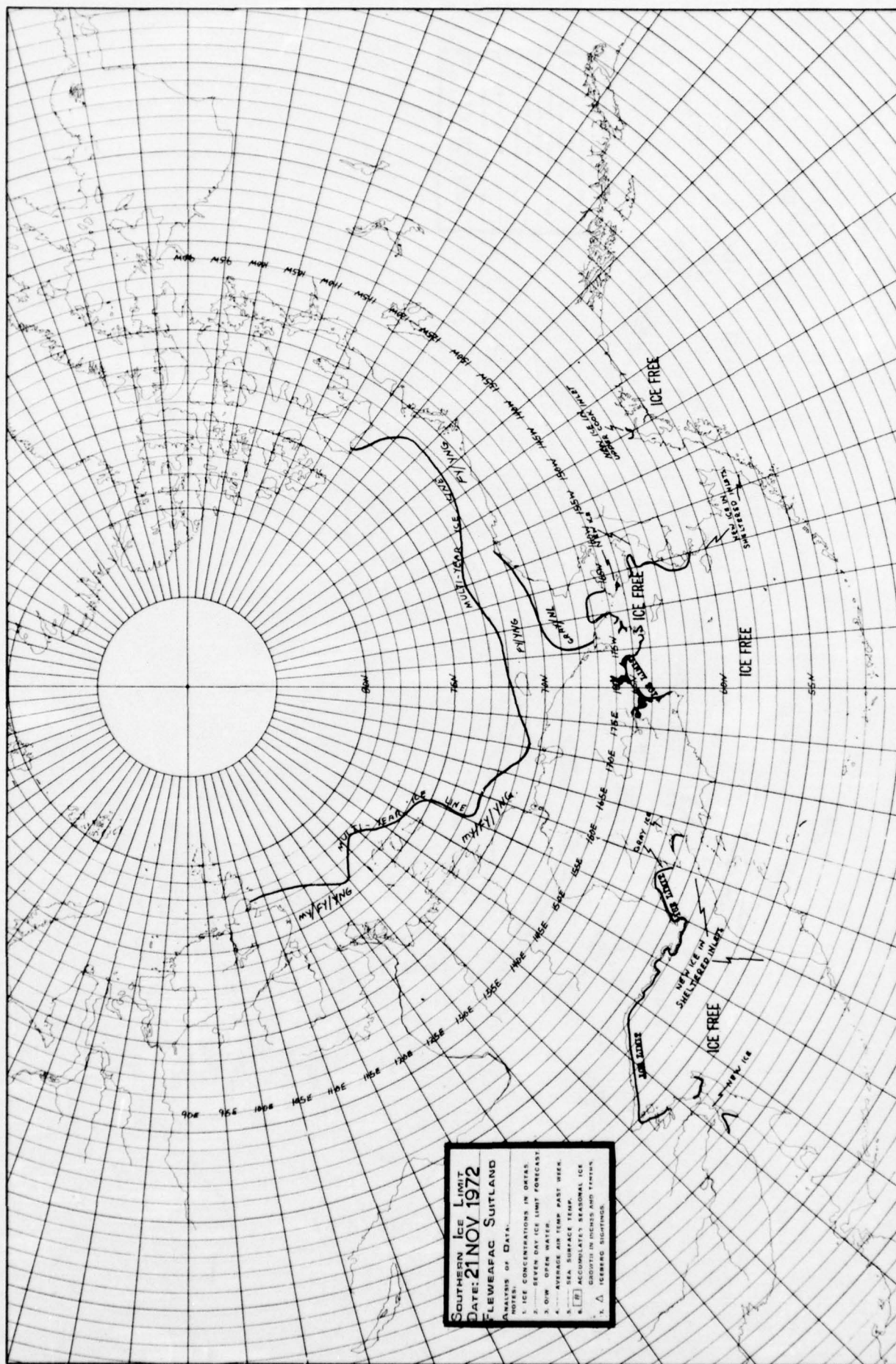


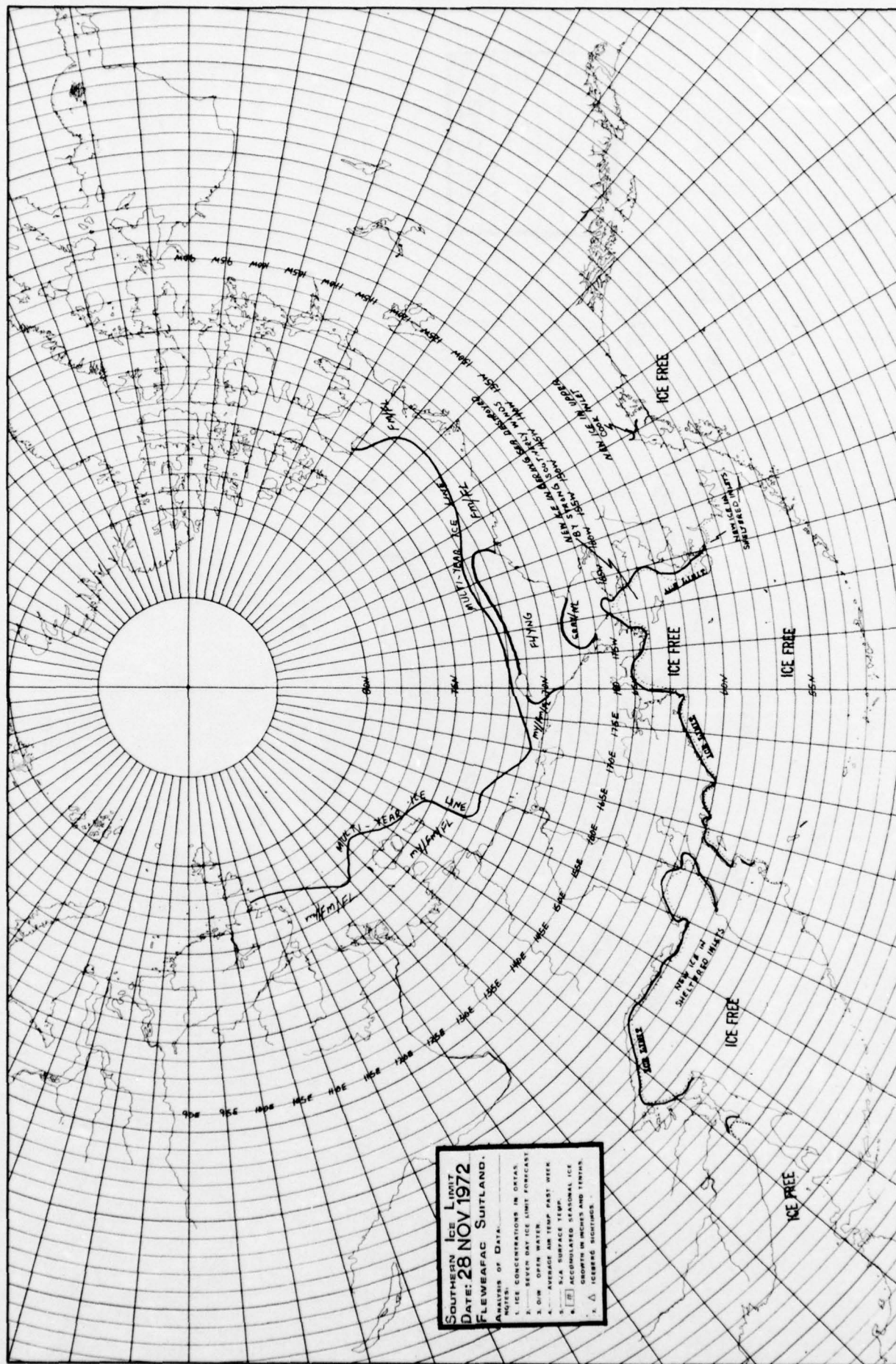


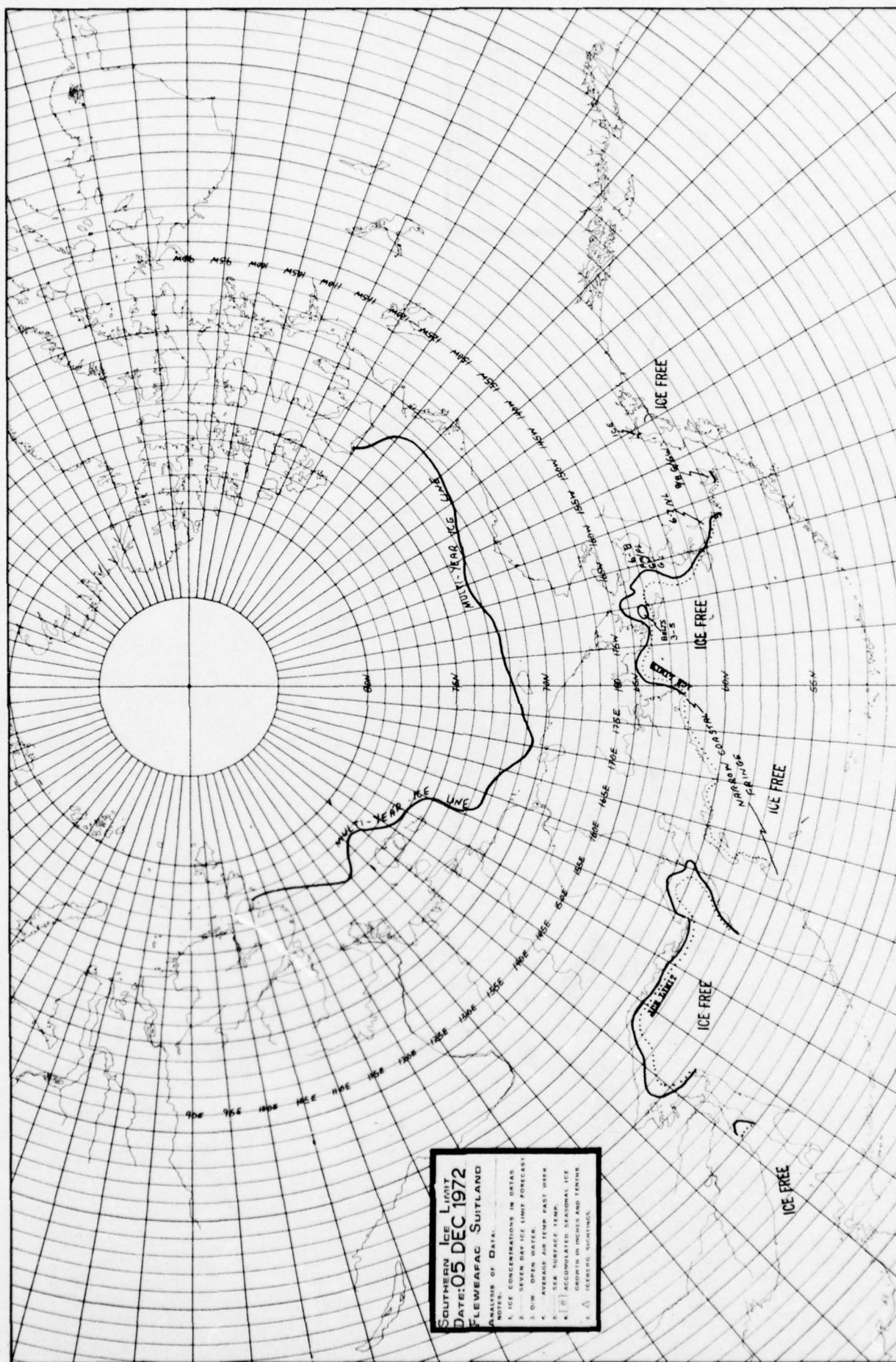


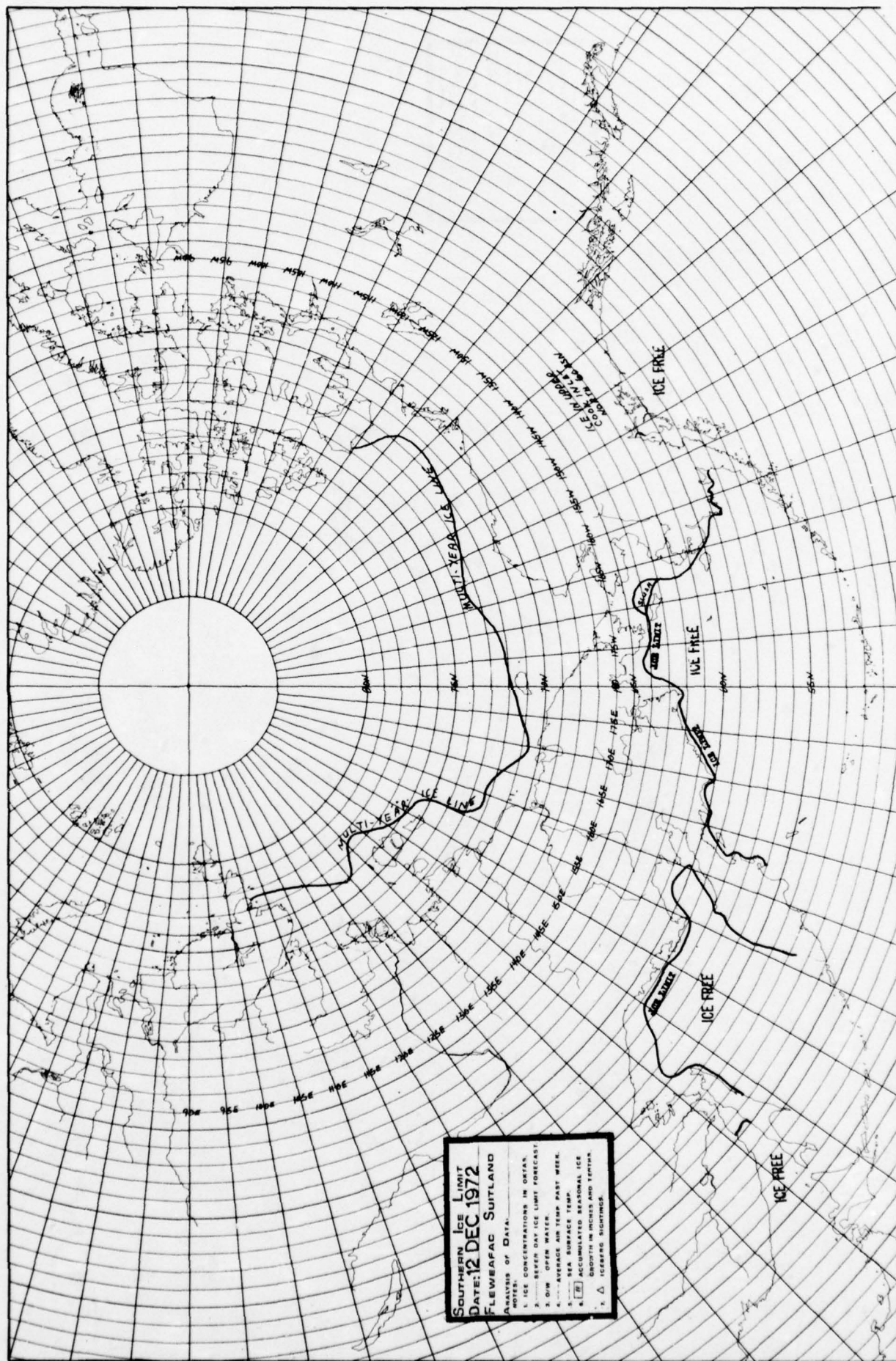


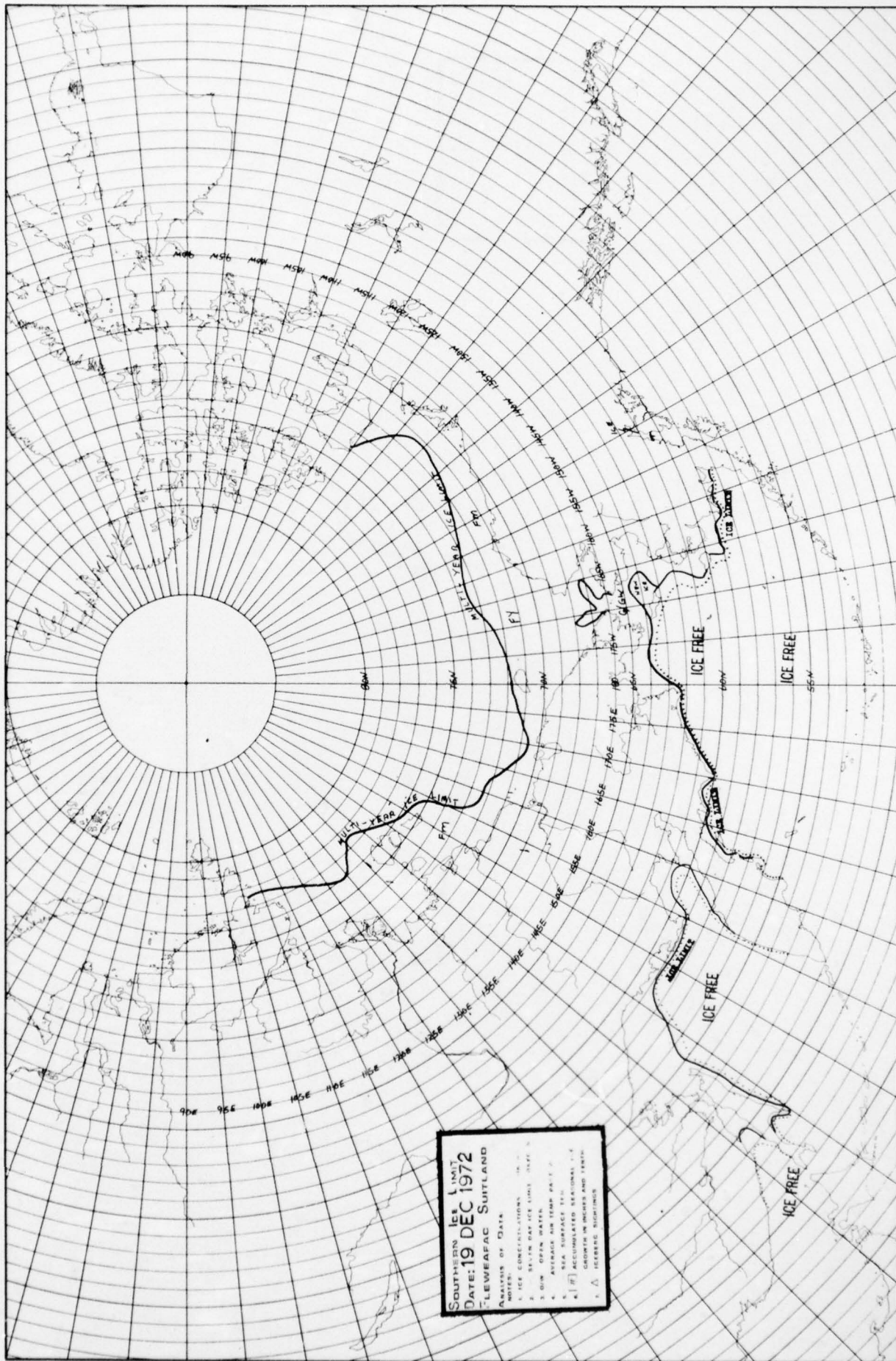


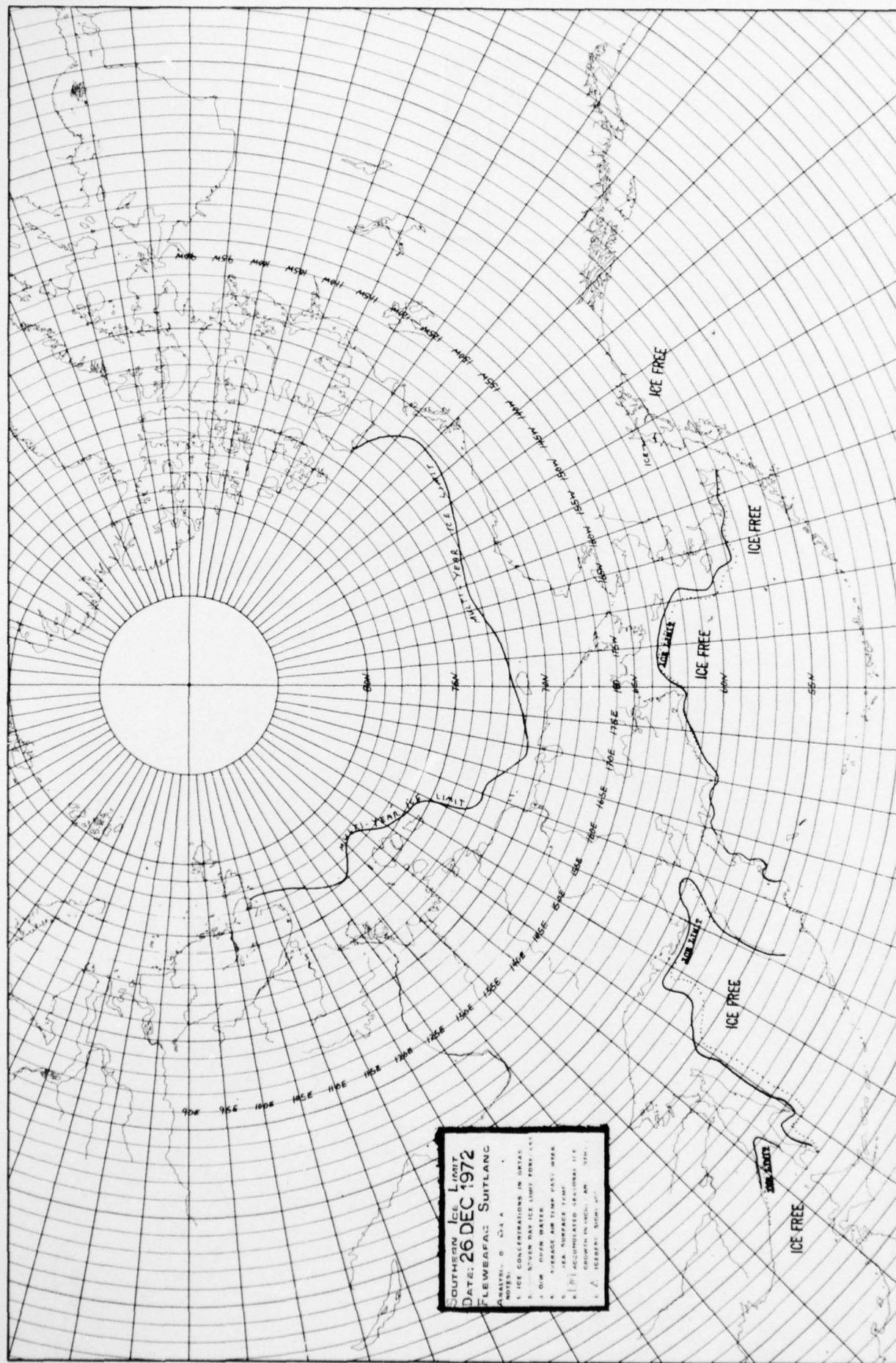


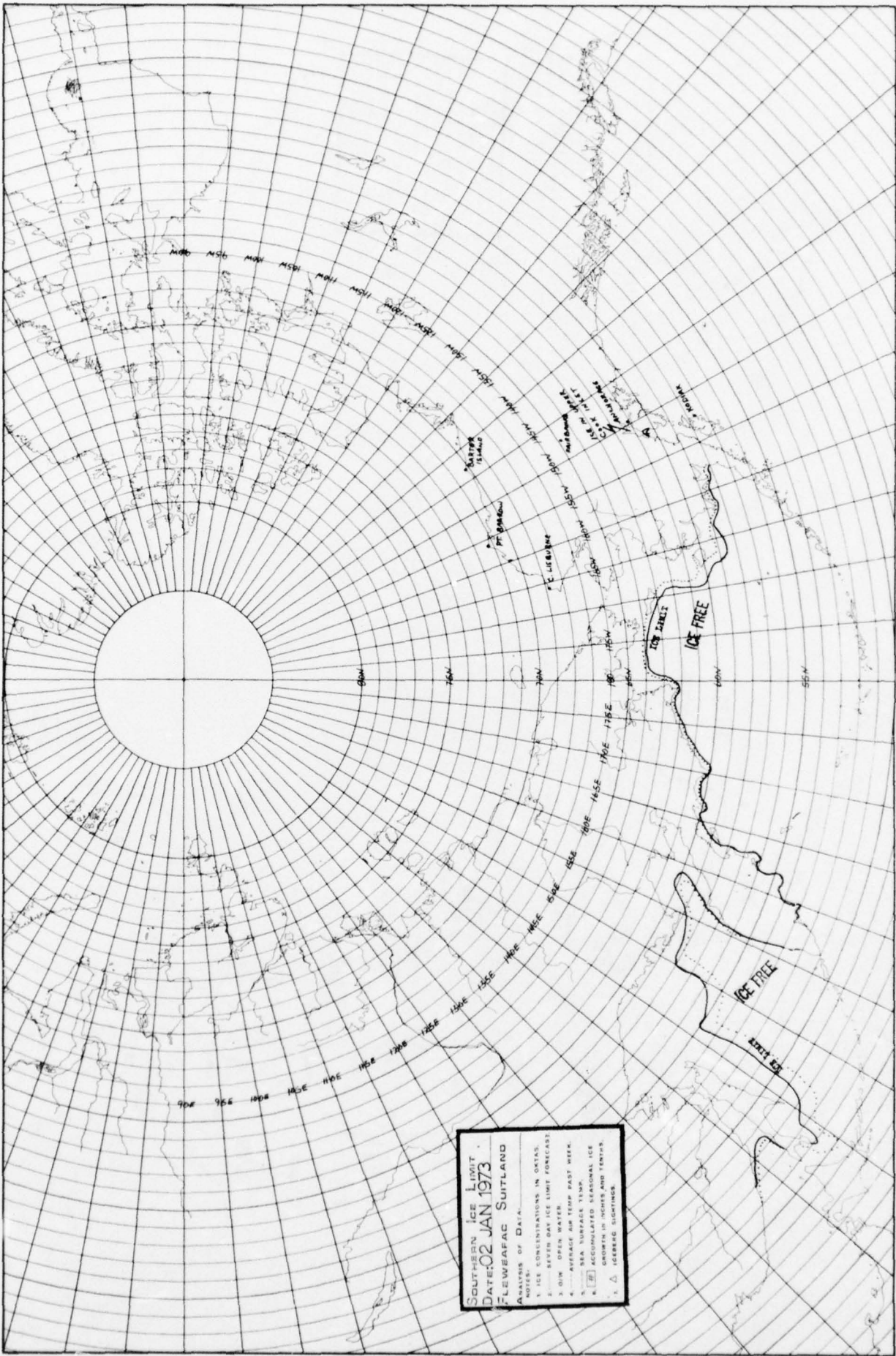




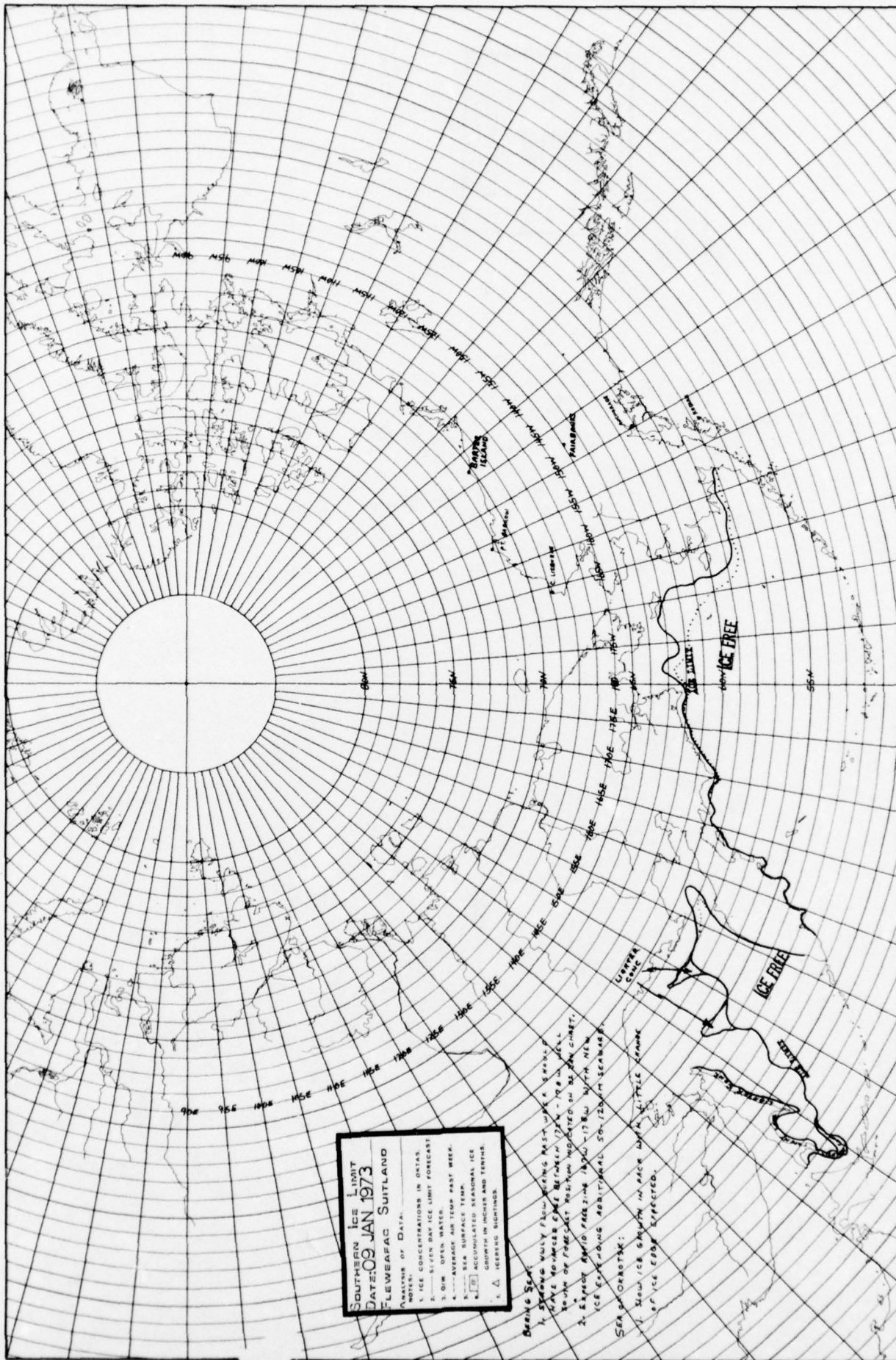


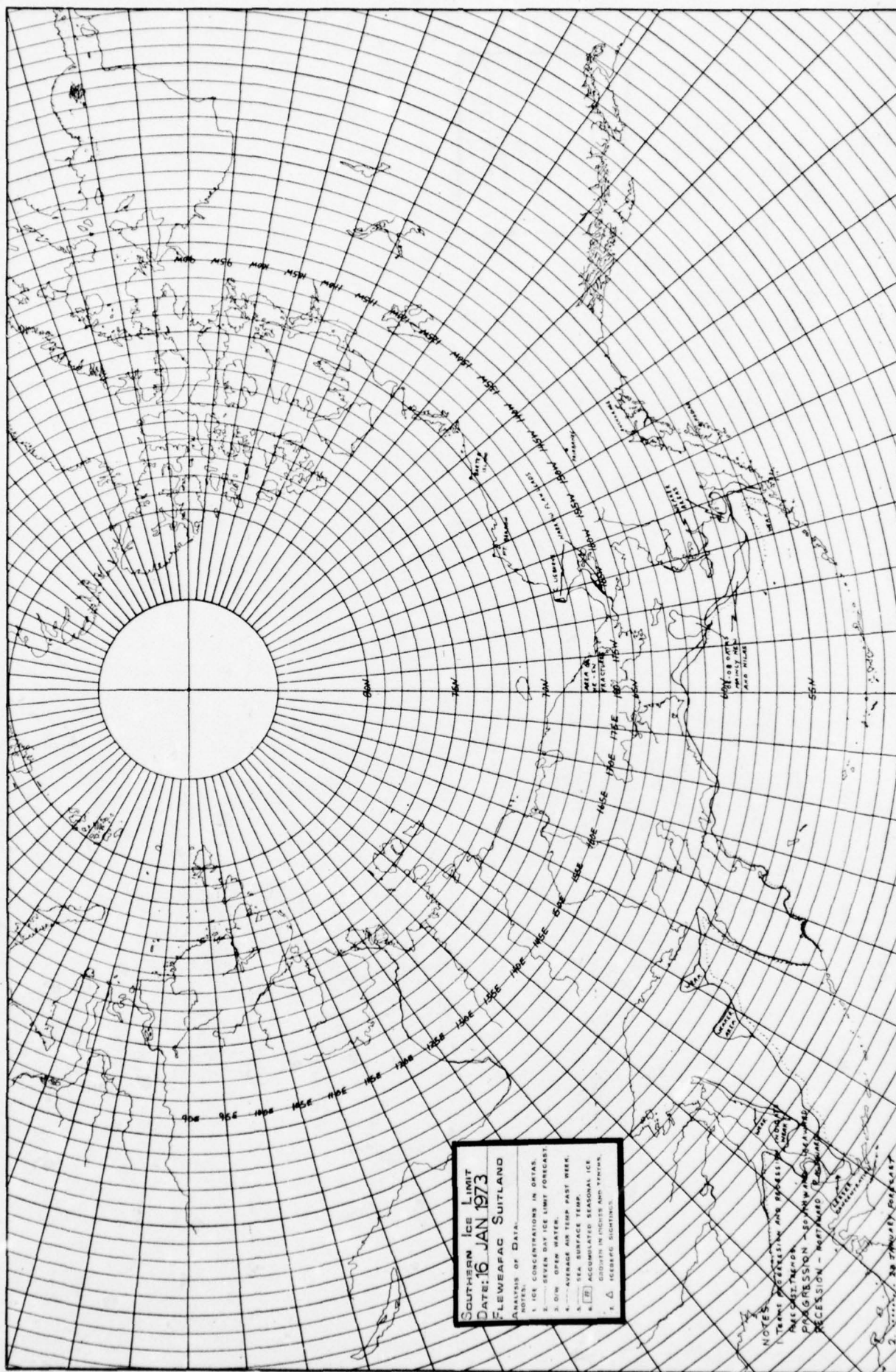


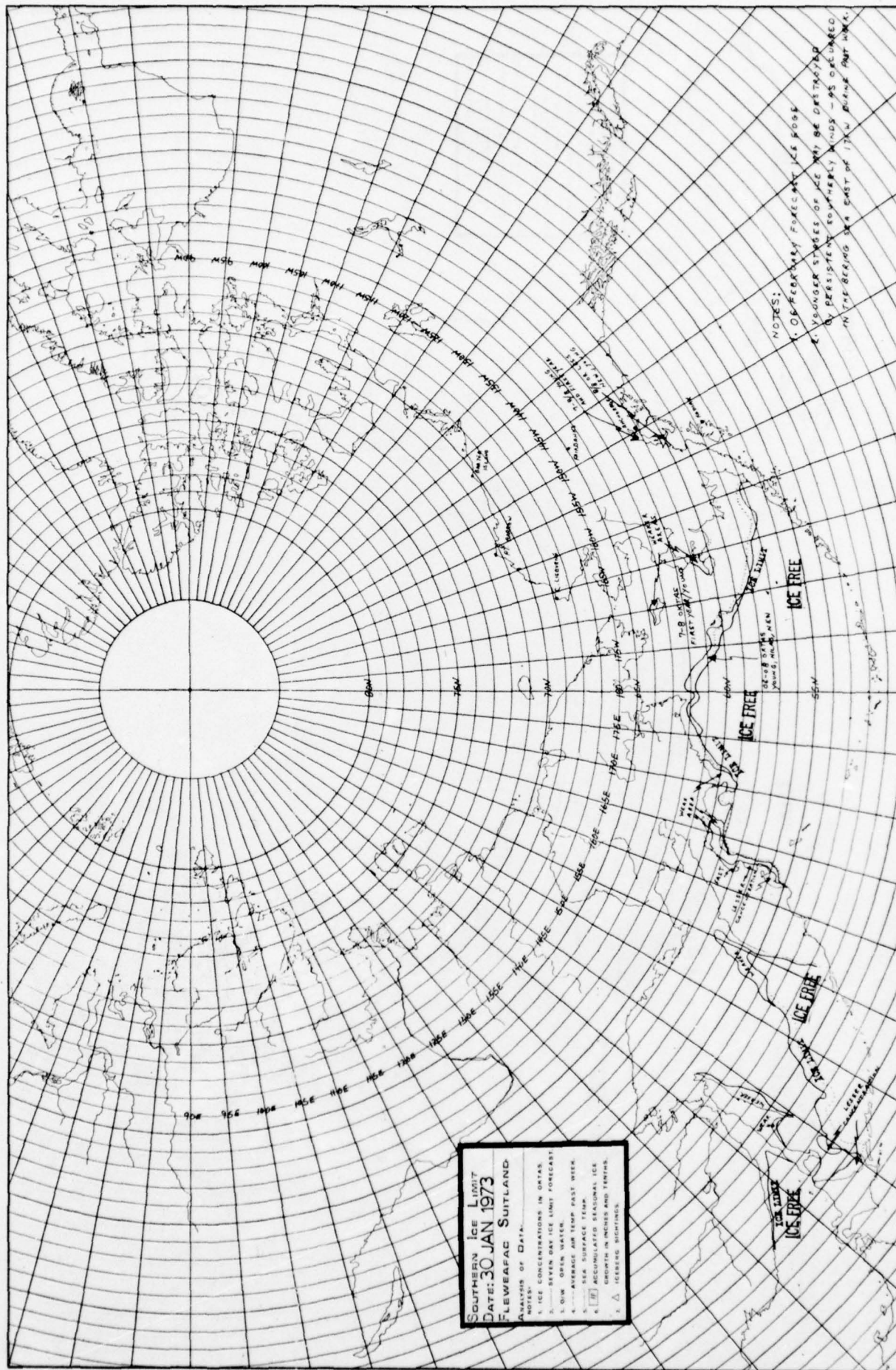




SOUTHERN ICE LIMIT
 DATE: 02 JAN 1973
 FLEWELFAC SUITLAND
 ANALYSIS OF DATA
 NOTES:
 1. ICE CONCENTRATIONS IN OZAS.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. DIM OPEN WATER.
 4. AVERAGE AIR TEMP PAST WEEK.
 5. SEA SURFACE TEMP.
 6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
 7. ICEBERG SIGHTINGS.



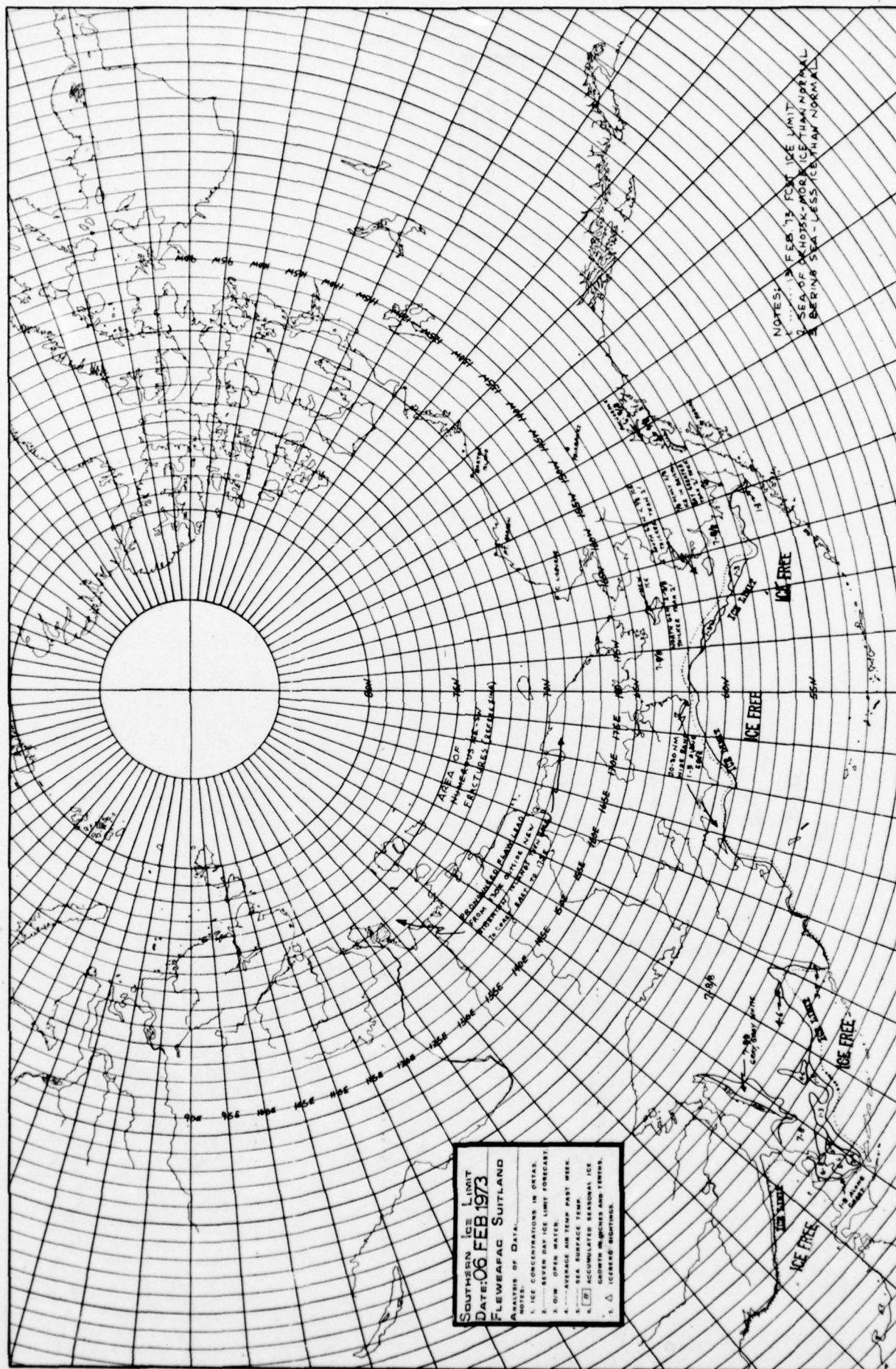


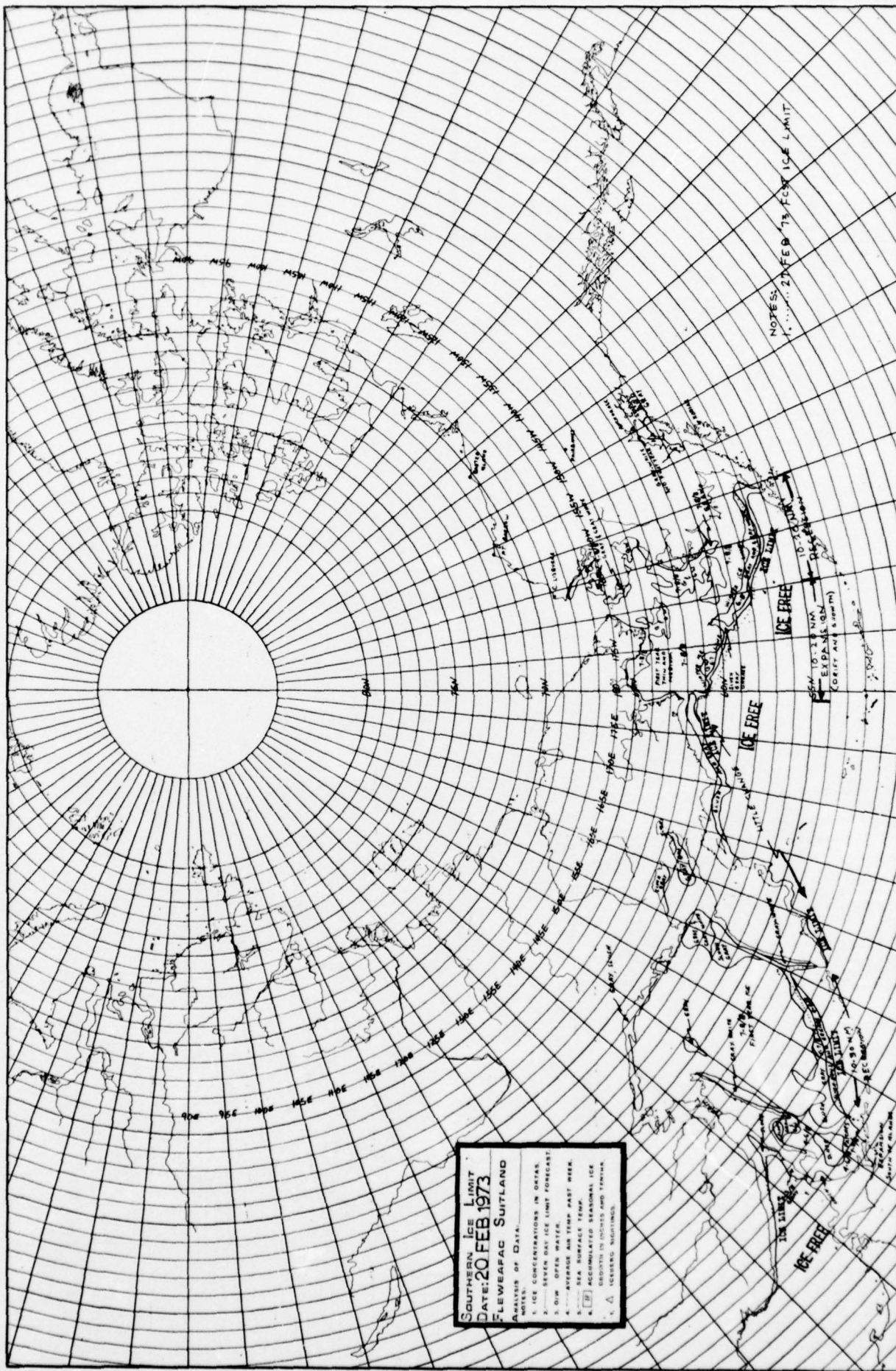


SOUTHERN ICE LIMIT
DATE: 30 JAN 1973
FLEWEAFAC SUITLAND

- ANALYSIS OF DATA:
- 1. ICE CONCENTRATIONS IN ORTHS
 - 2. SEVEN DAY ICE LIMIT FORECAST
 - 3. OPEN OCEAN WATER
 - 4. AVERAGE AIR TEMP. PAST WEEK
 - 5. SEA SURFACE TEMP.
 - 6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS
 - 7. ICEBERG POSITIONS

NOTES:
1. OBSERVATIONS FORECAST ICE 1966
2. YOUNGER STAGES OF ICE MAY BE DETECTED
3. PERSISTENT SOUTHERLY WINDS - 95 DEGREES IN THE BRING IN A EAST OF 170N BURSE ANT AREA.



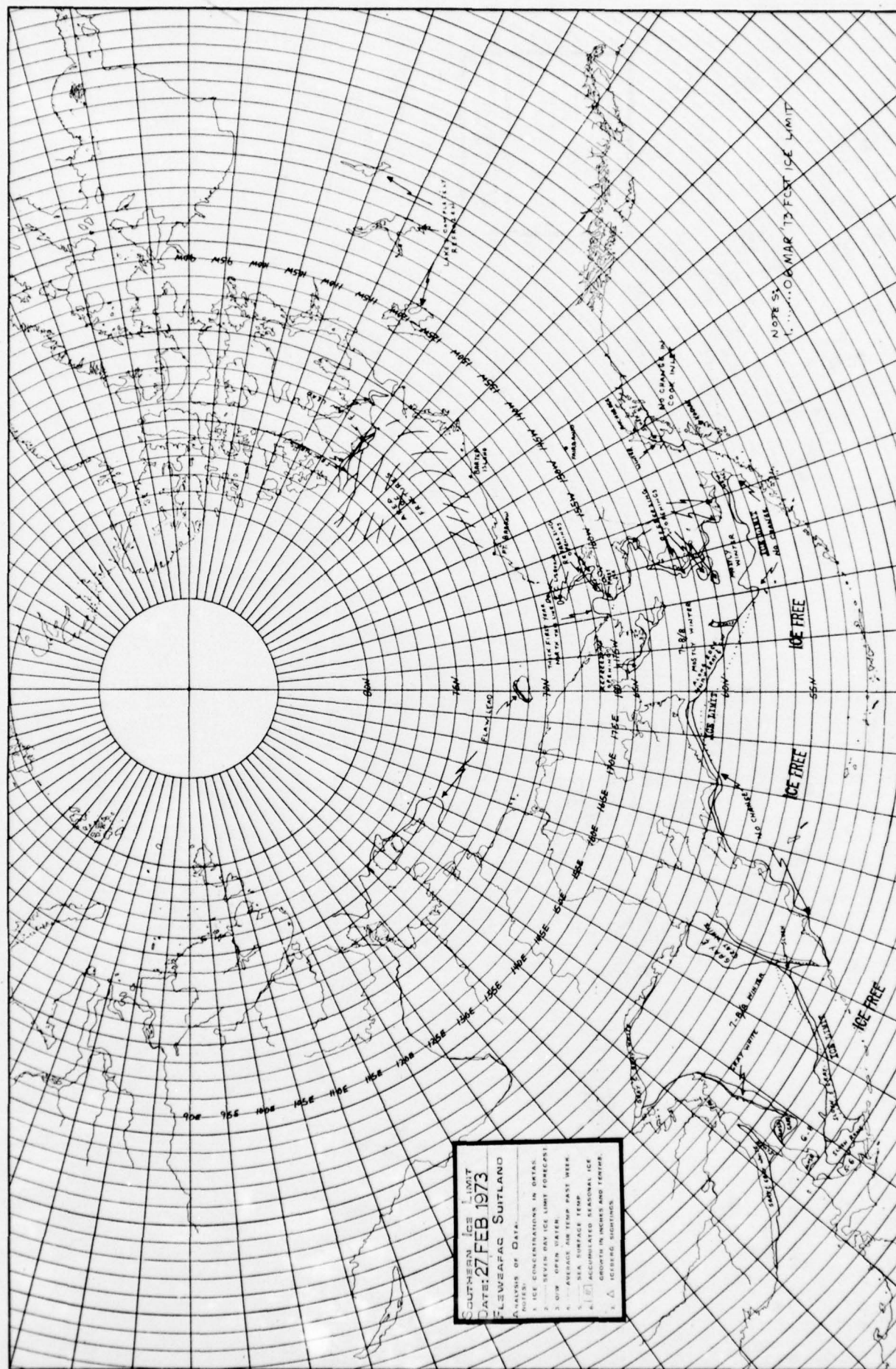


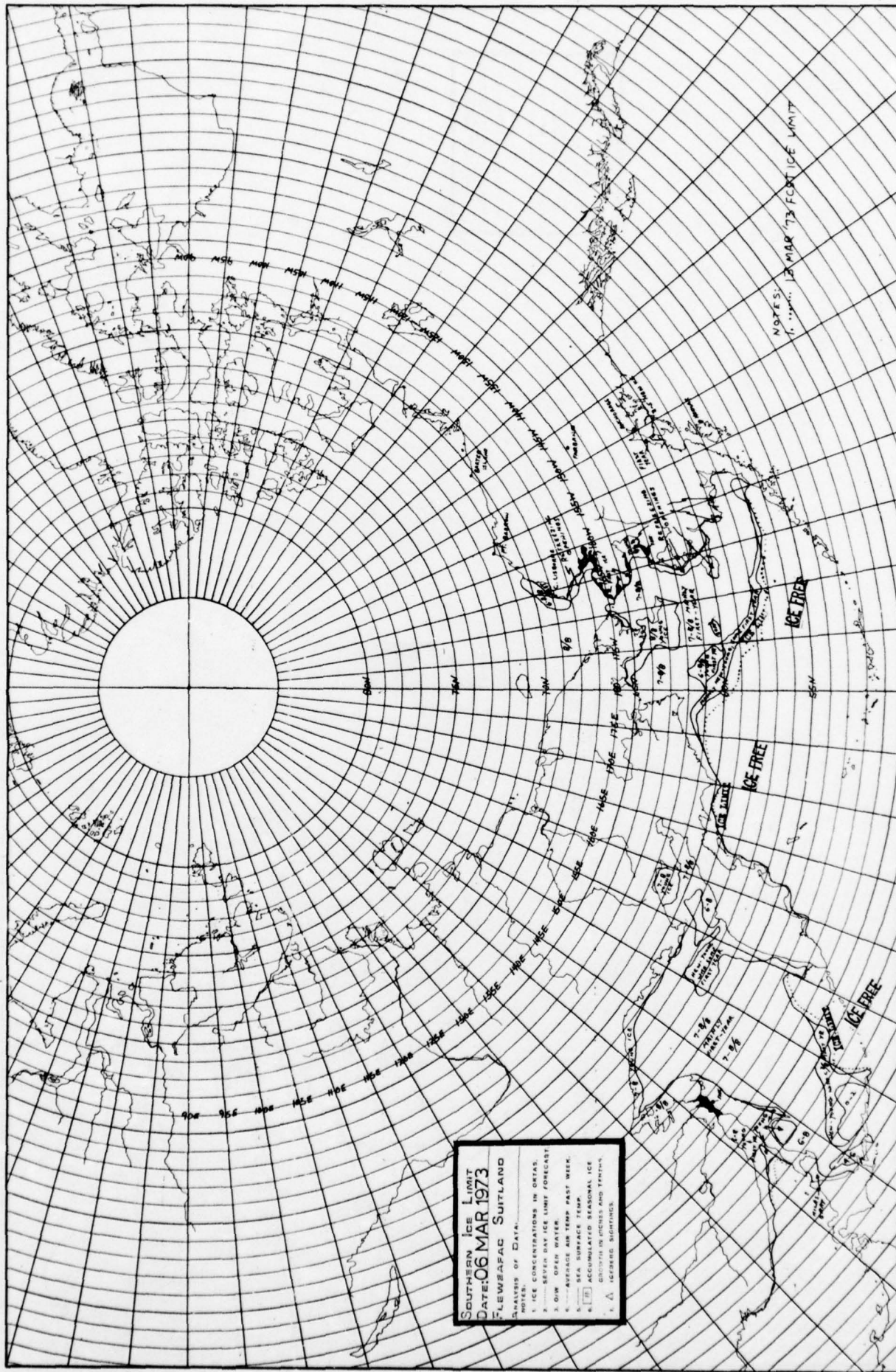
SOUTHERN ICE LIMIT
DATE: 20 FEB 1973
FLEWELPAC SUTLAND

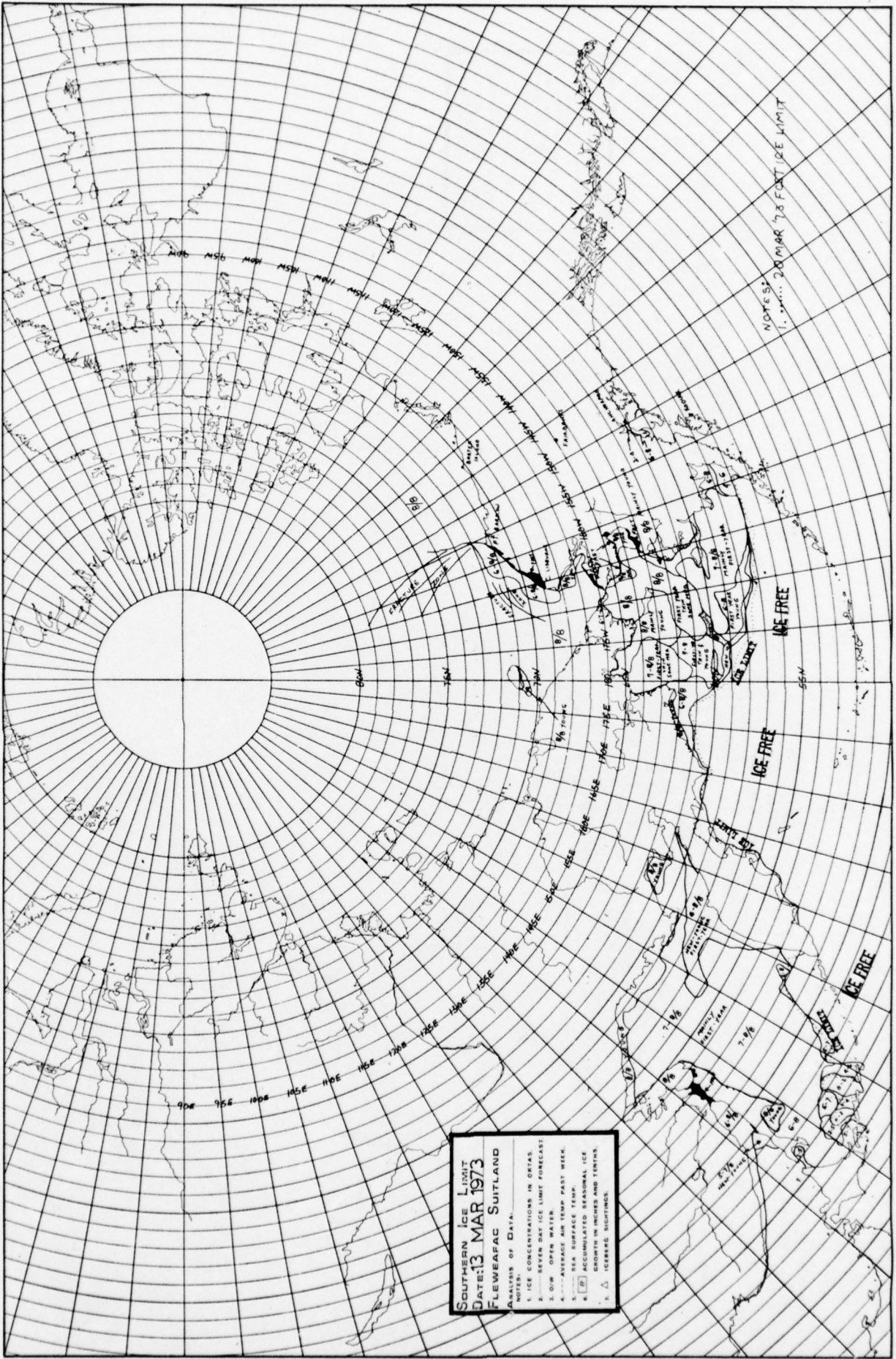
ANALYSIS OF DATA:

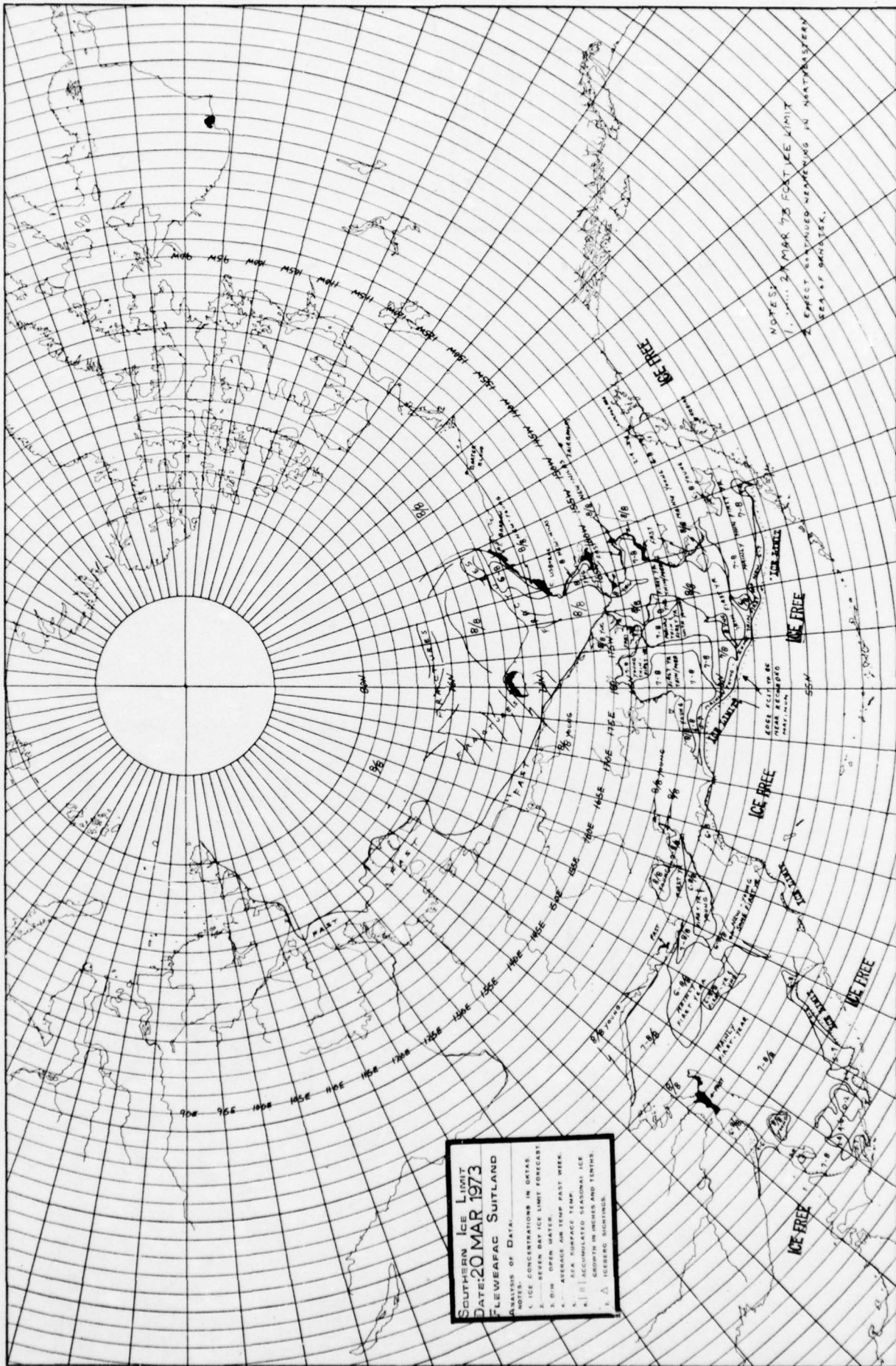
1. ICE CONCENTRATIONS IN DATA
 2. ICE TYPE, DRY ICE LIMIT FORECAST
 3. DRY ICE TYPE, WATER
 4. AIRTEMP, SURFACE TEMP, WIND, WAVE, WAVE PERIOD
 5. SEA SURFACE TEMP
 6. ACCUMULATED SEASONAL ICE
 7. GROWTH TO POINTS AND TENDERS
 8. ICEBERG SIGHTINGS

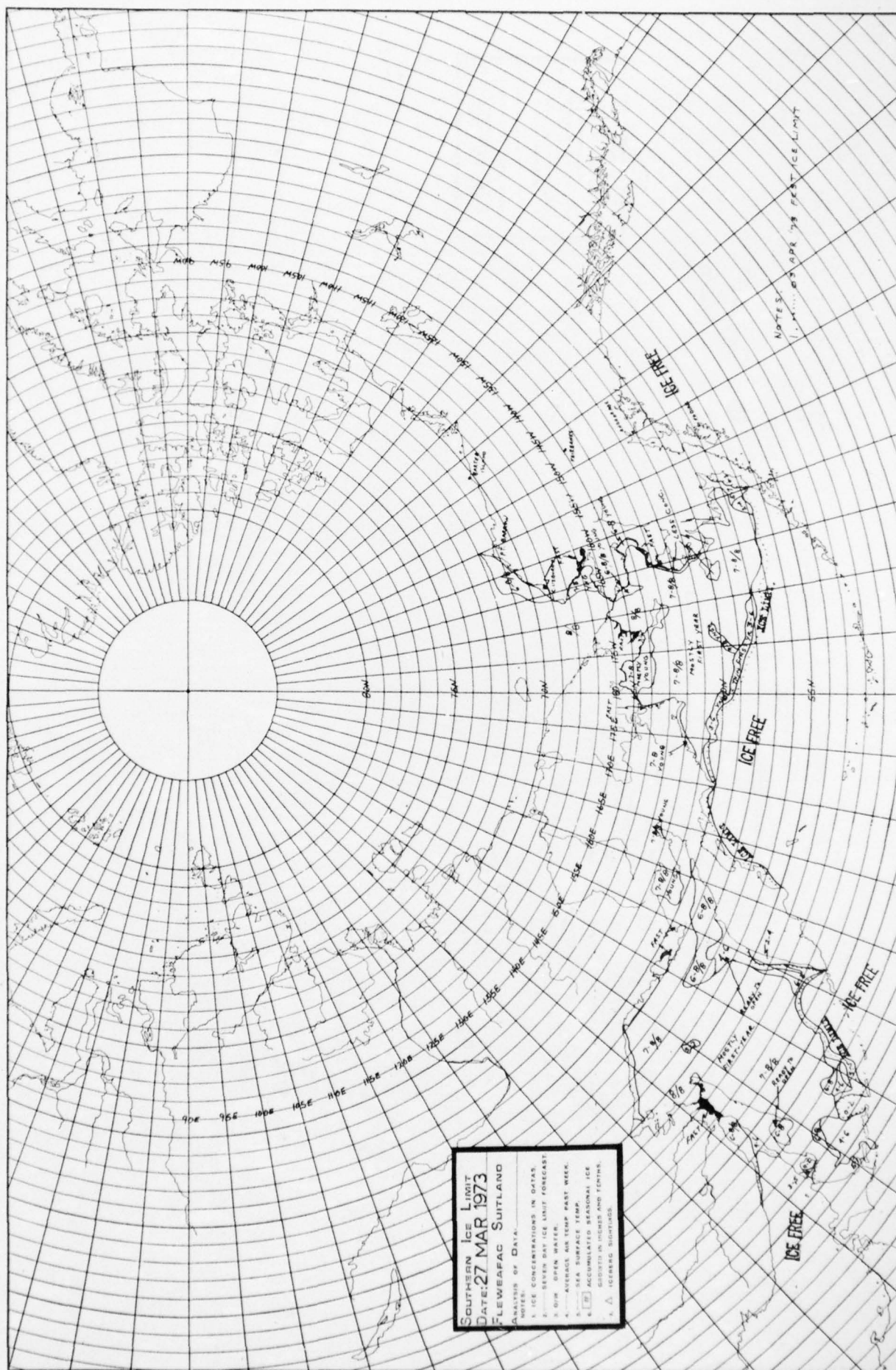
NOTES:
 1. DASHED LINE IS ICE LIMIT

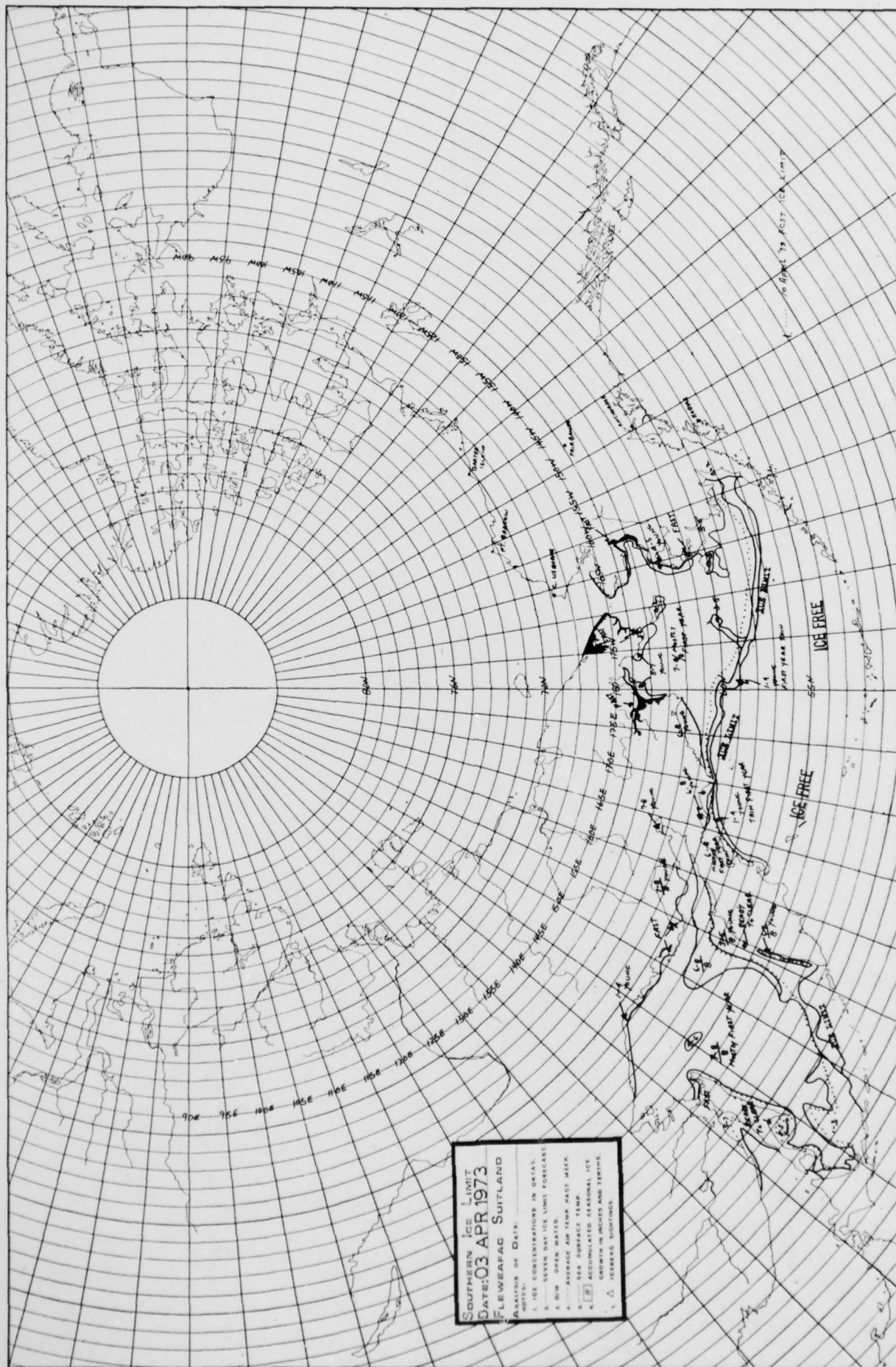


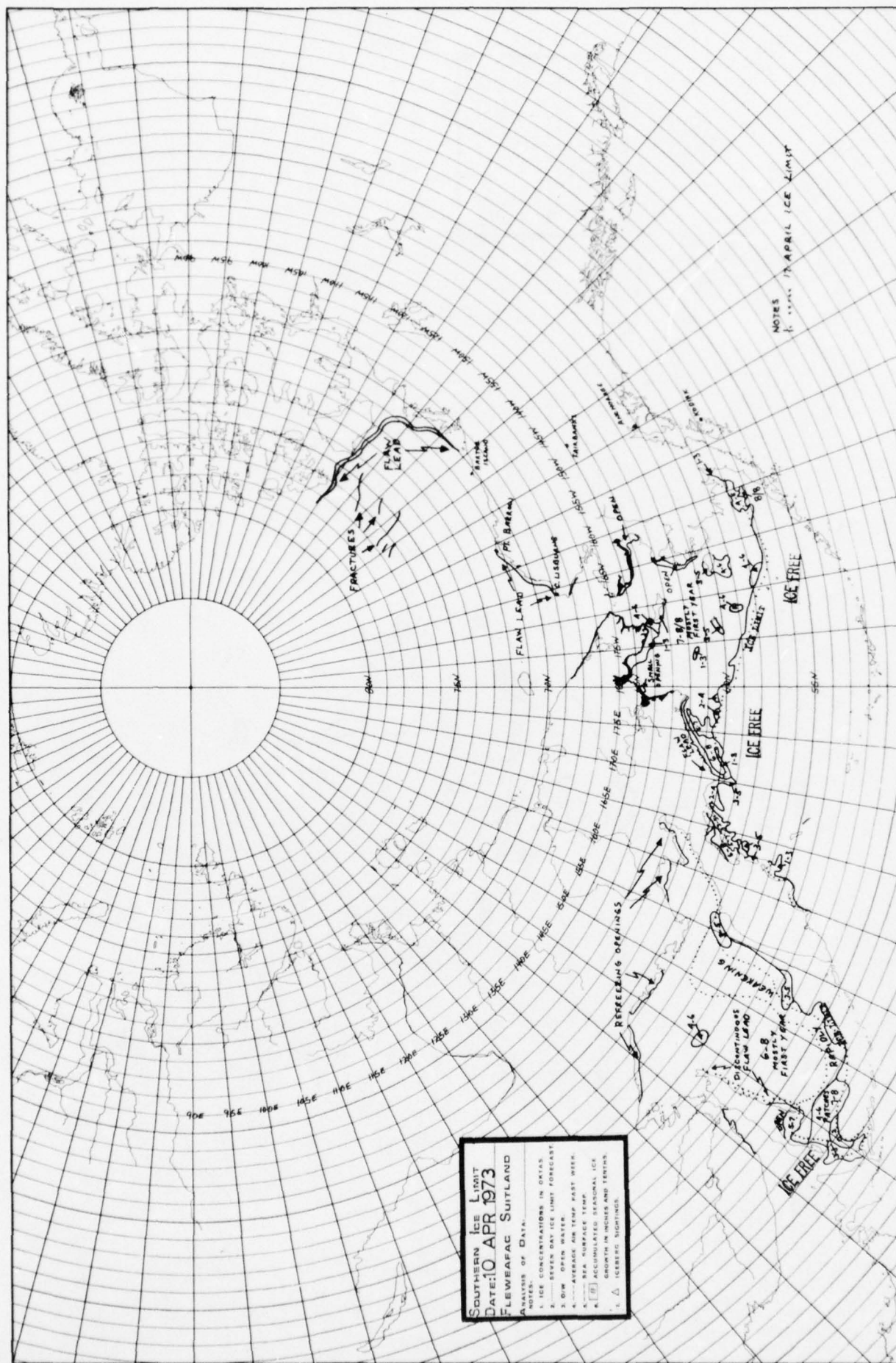


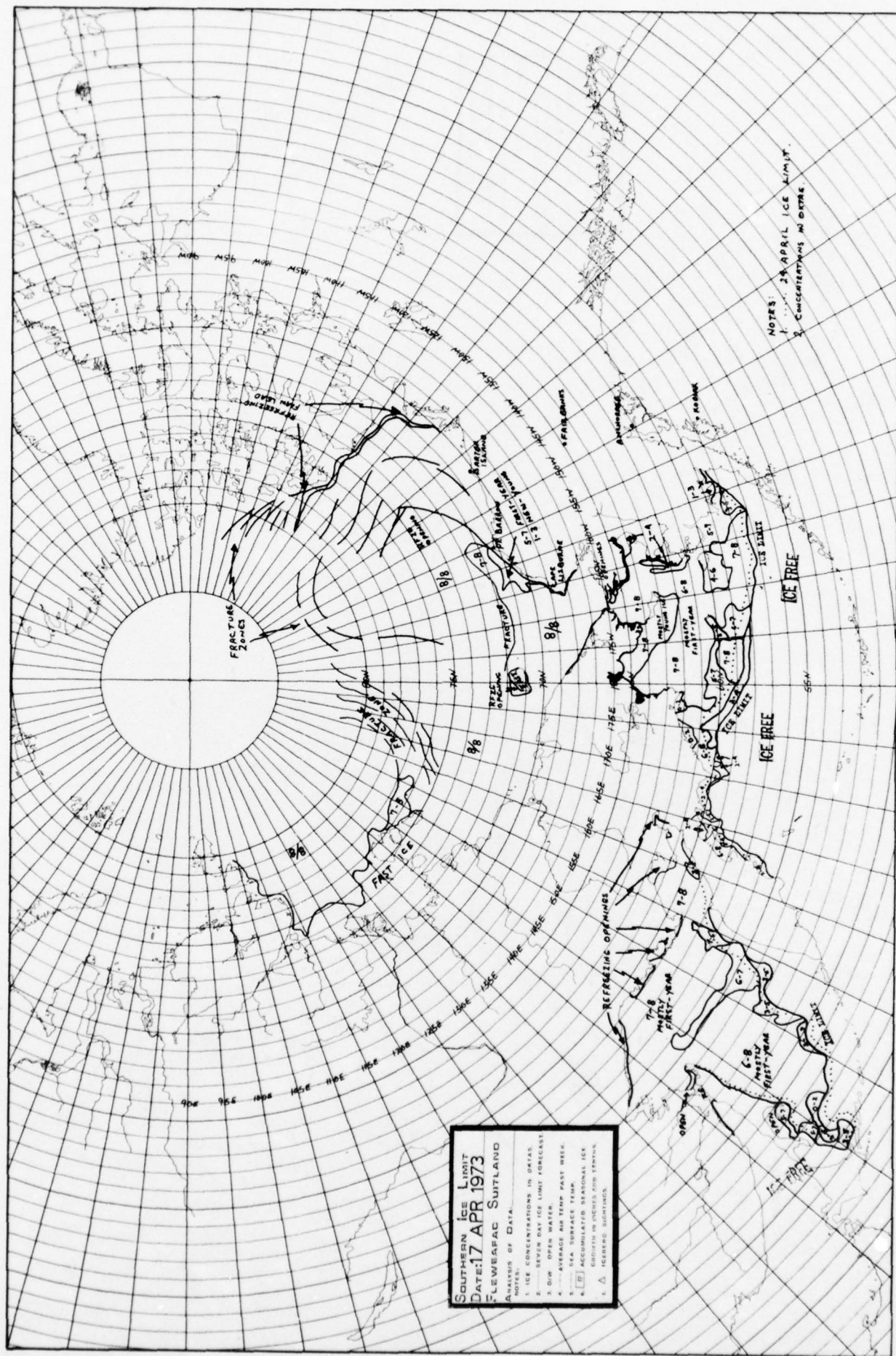


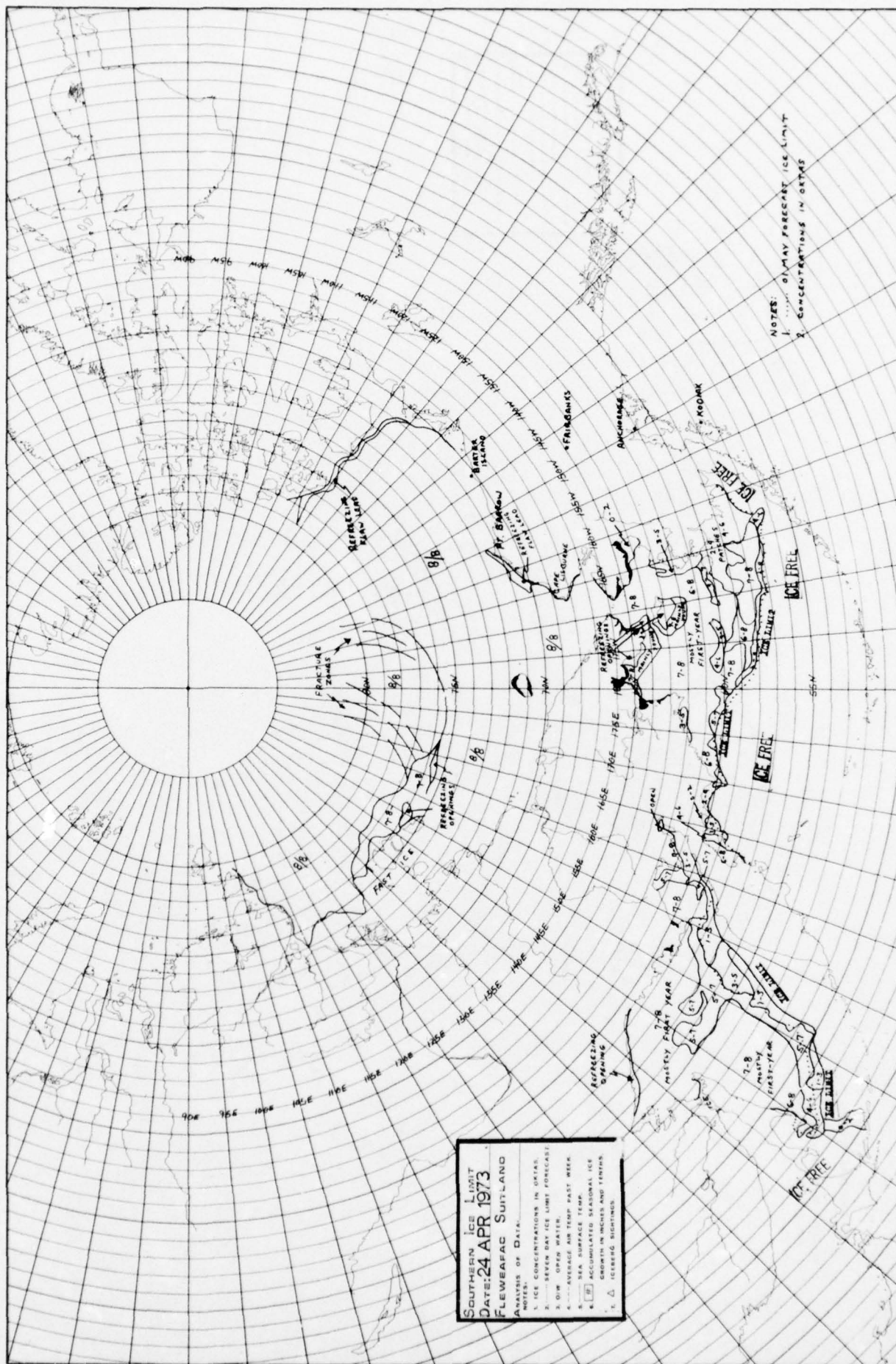


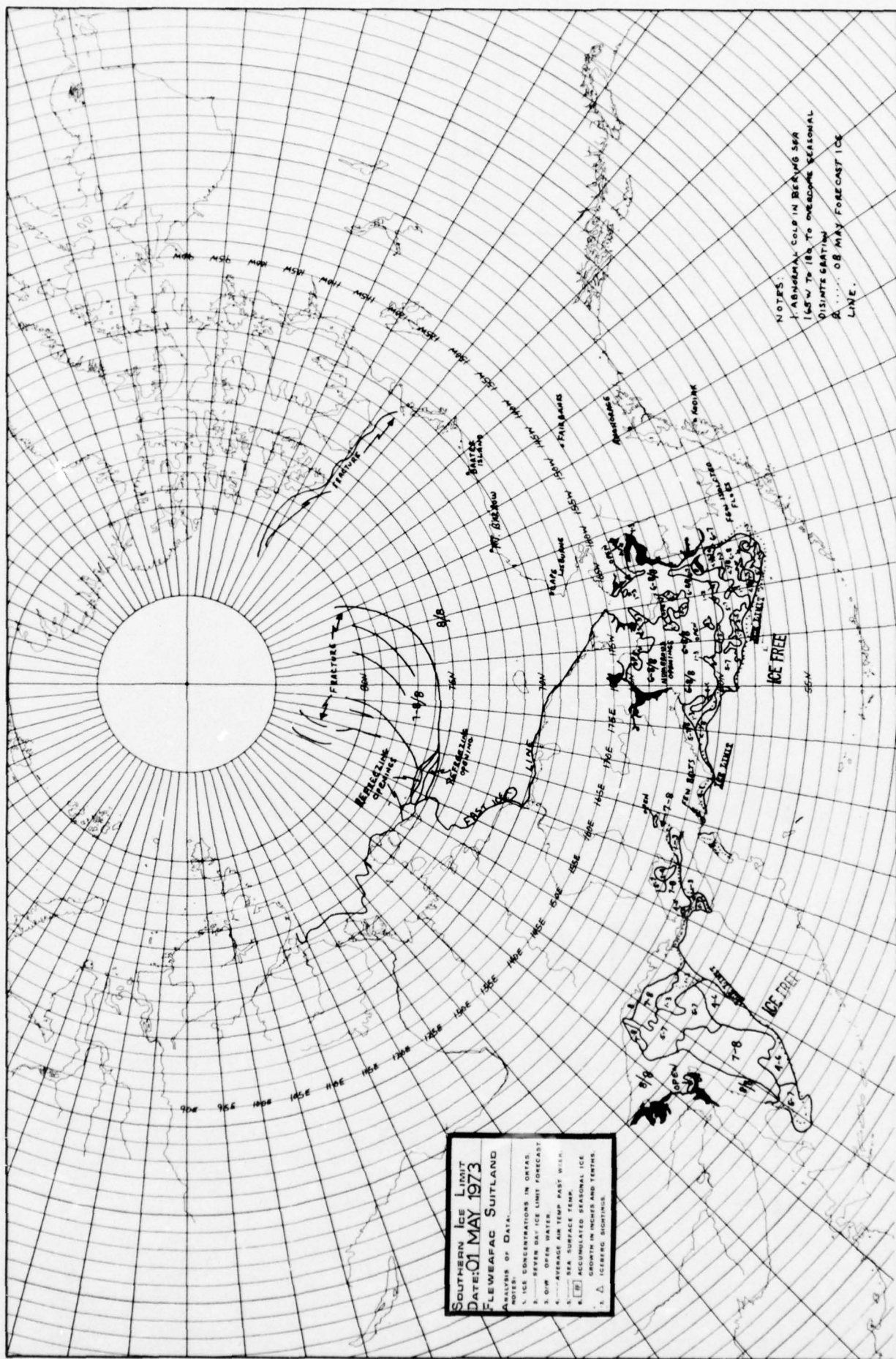


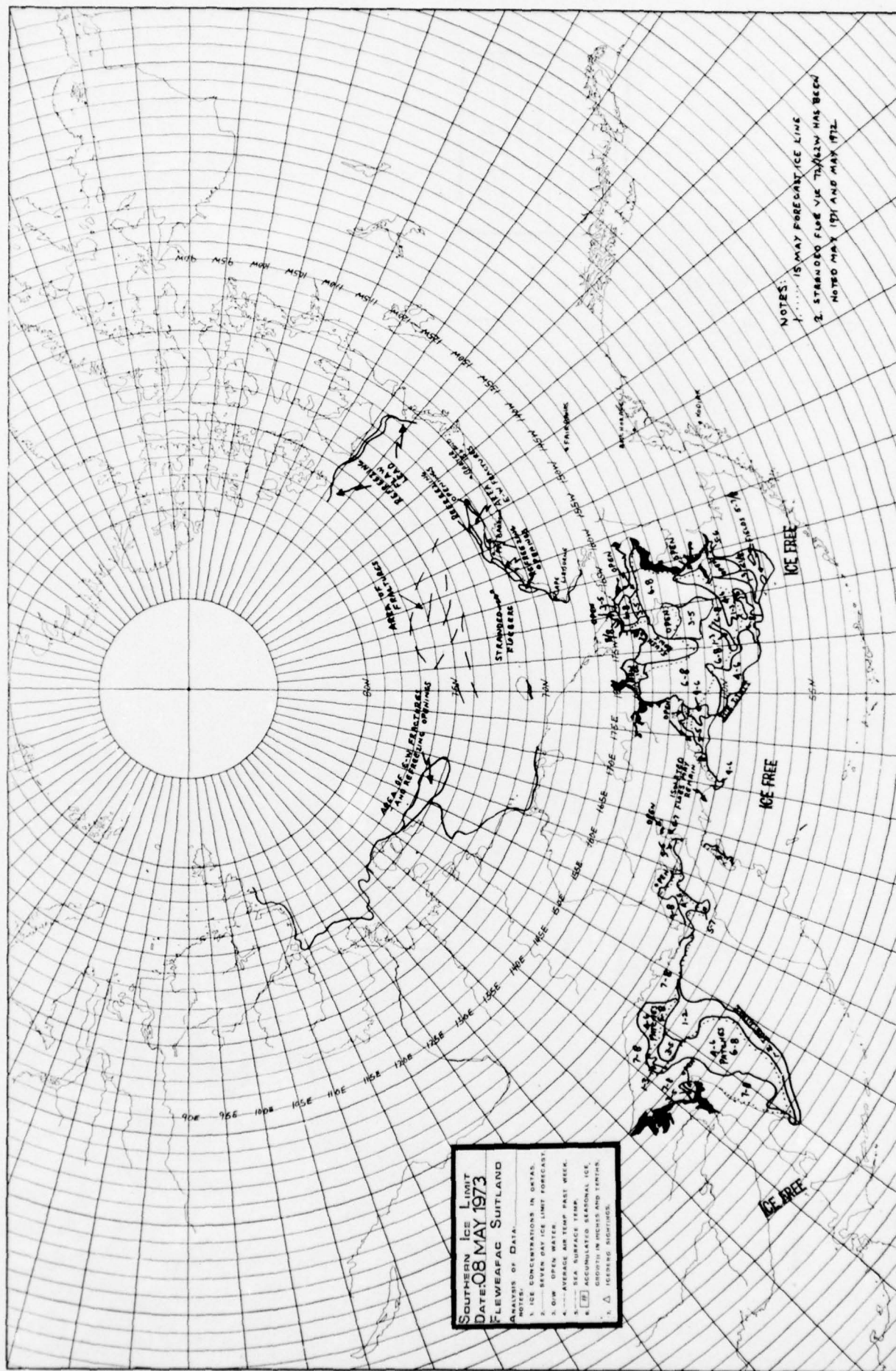


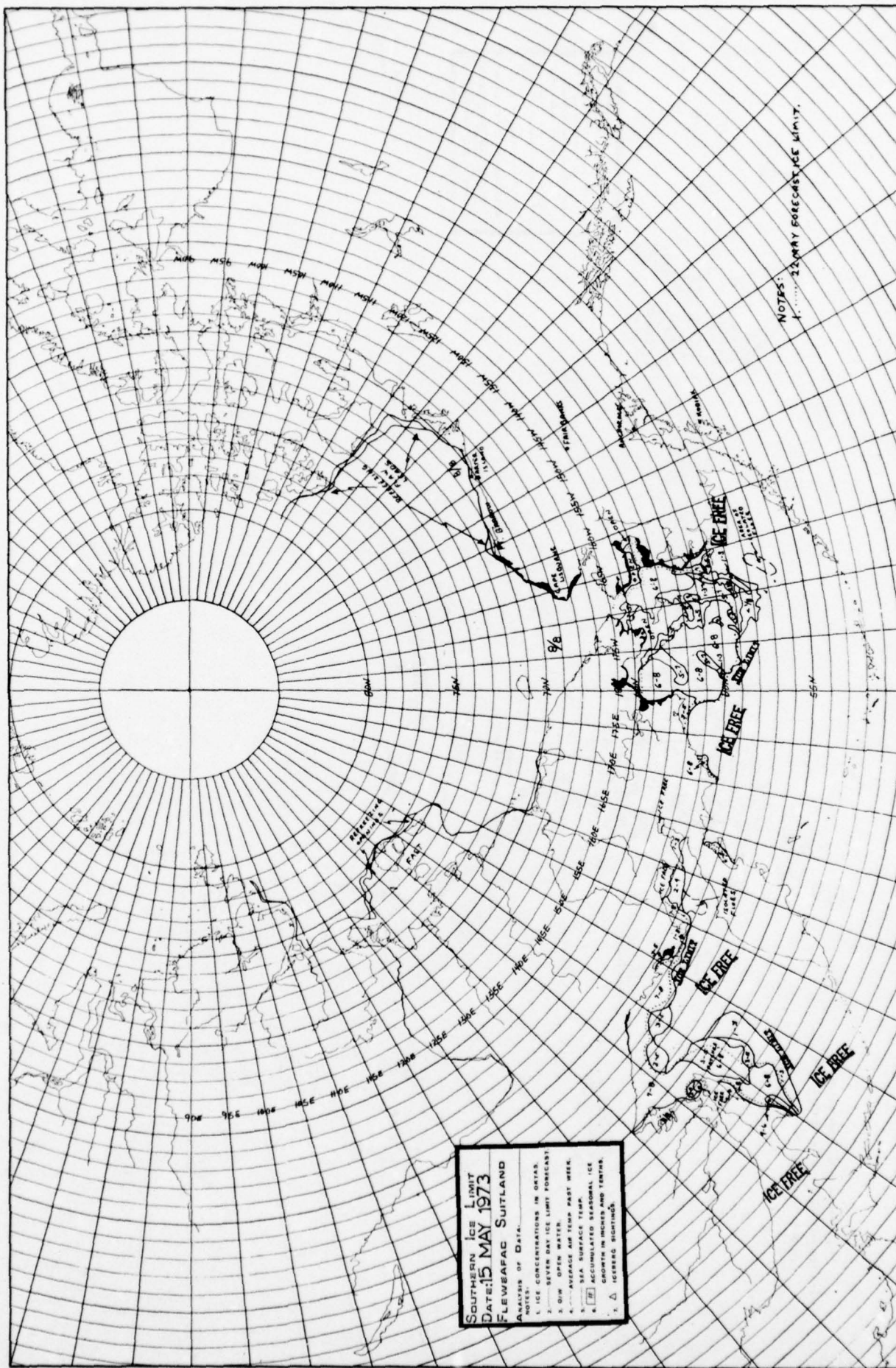


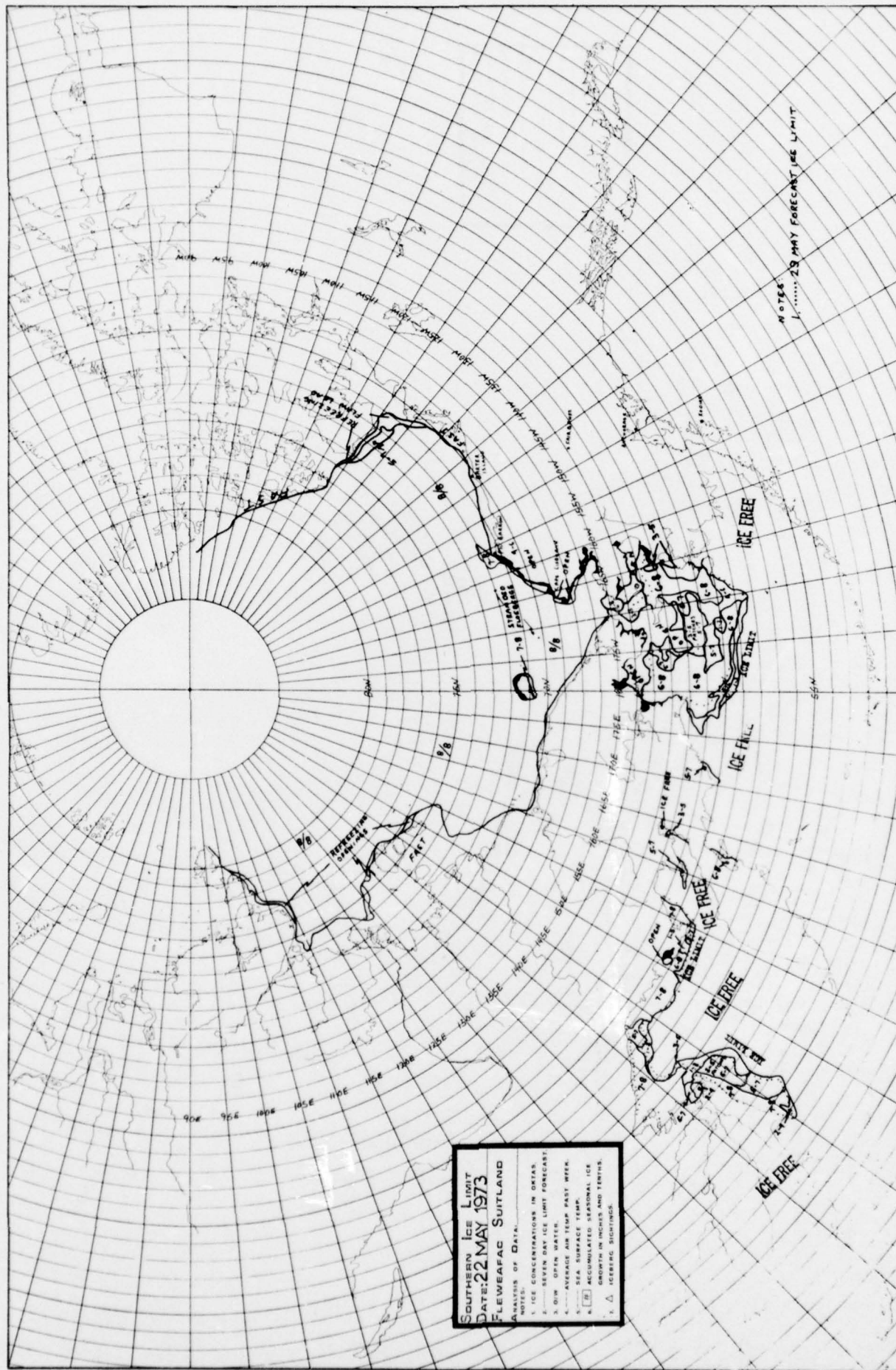


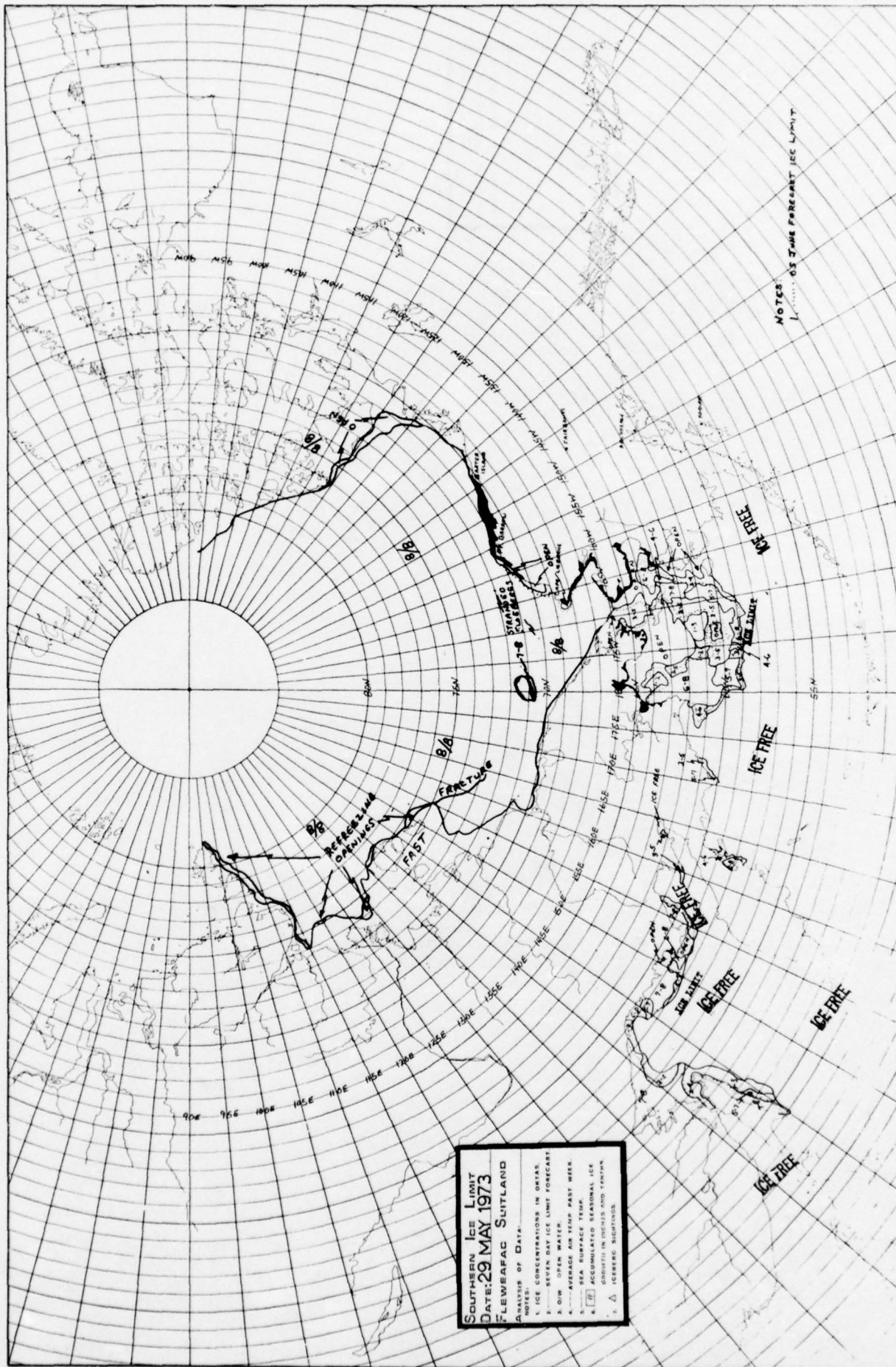


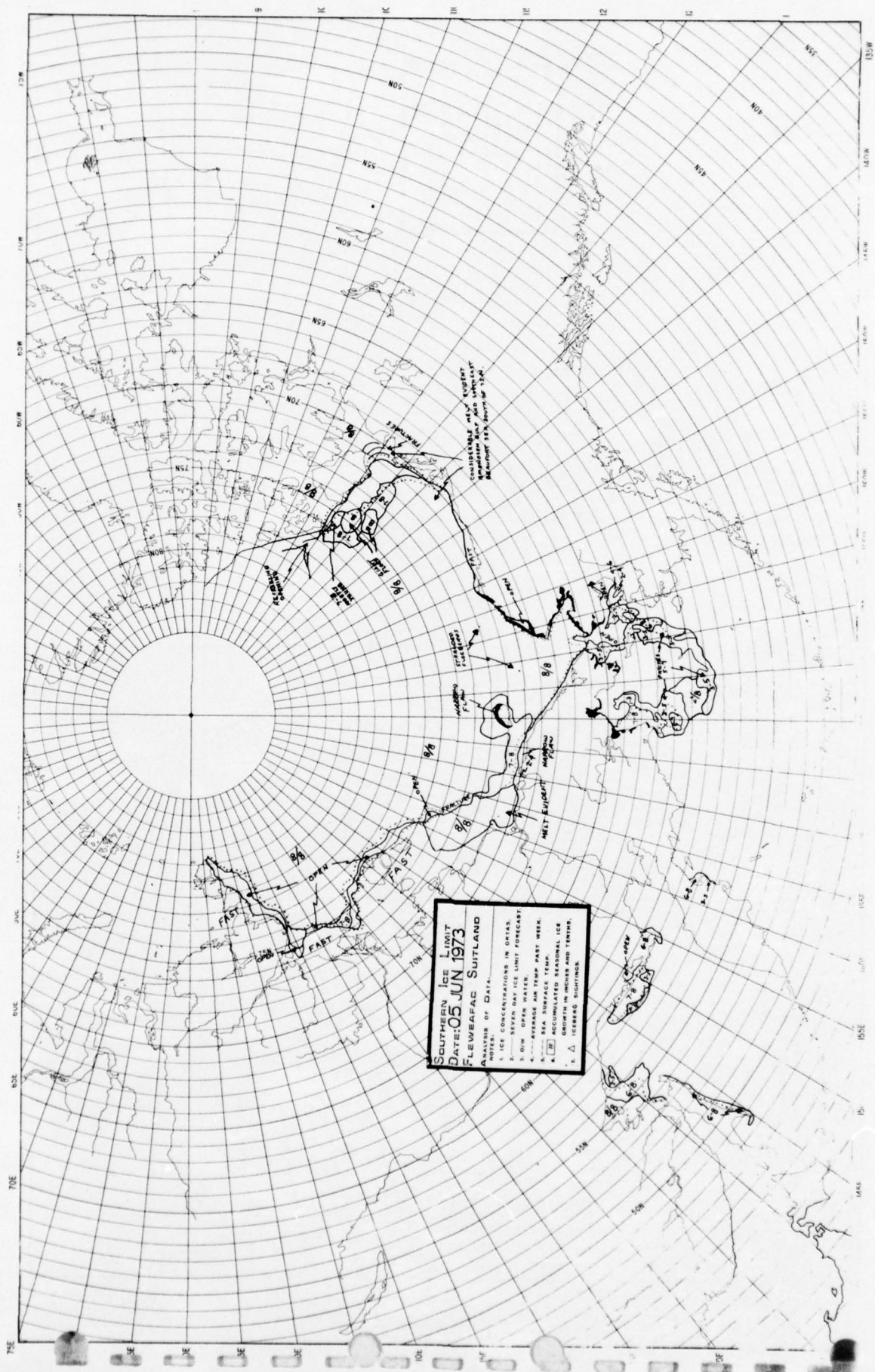






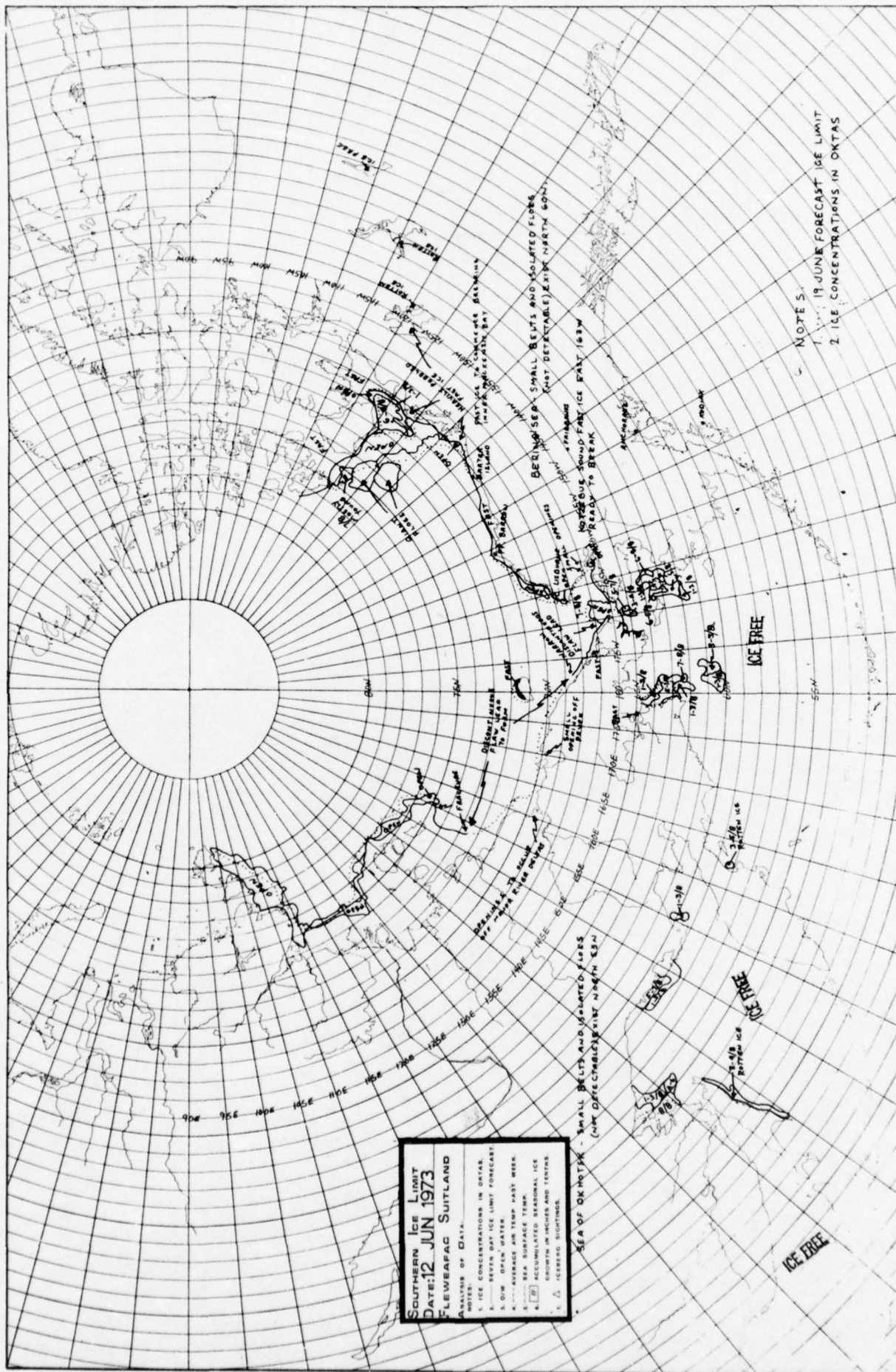


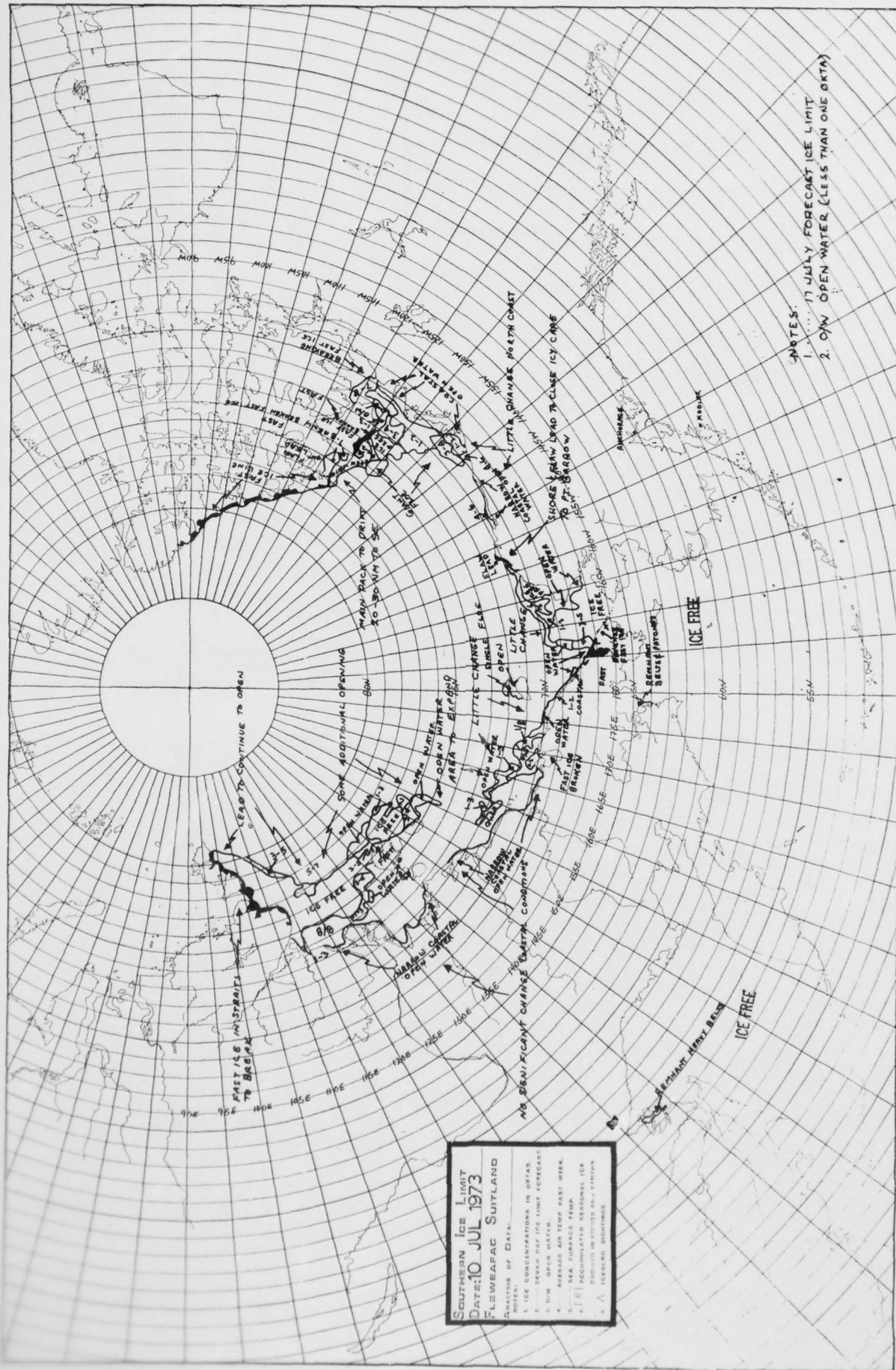


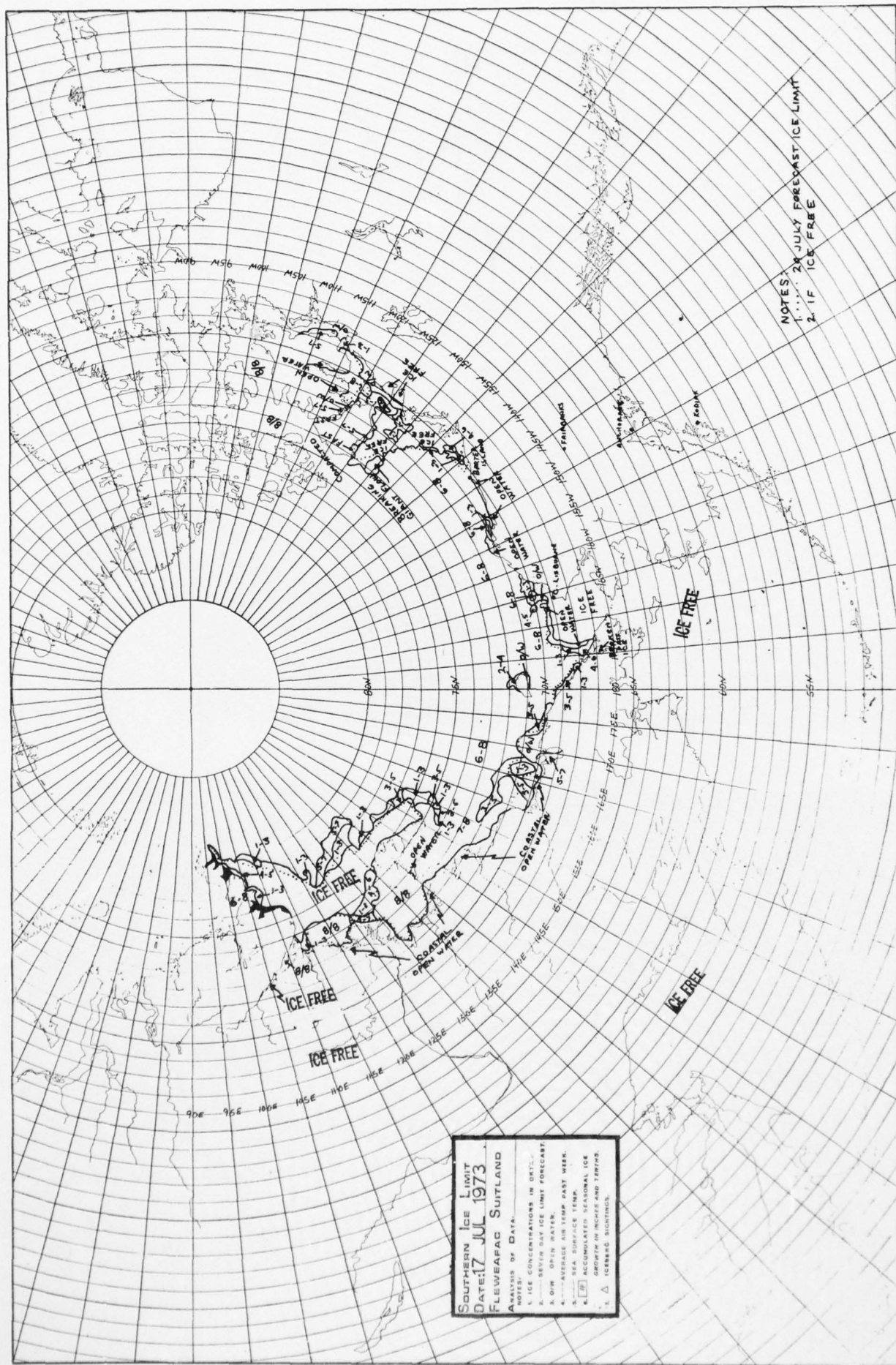


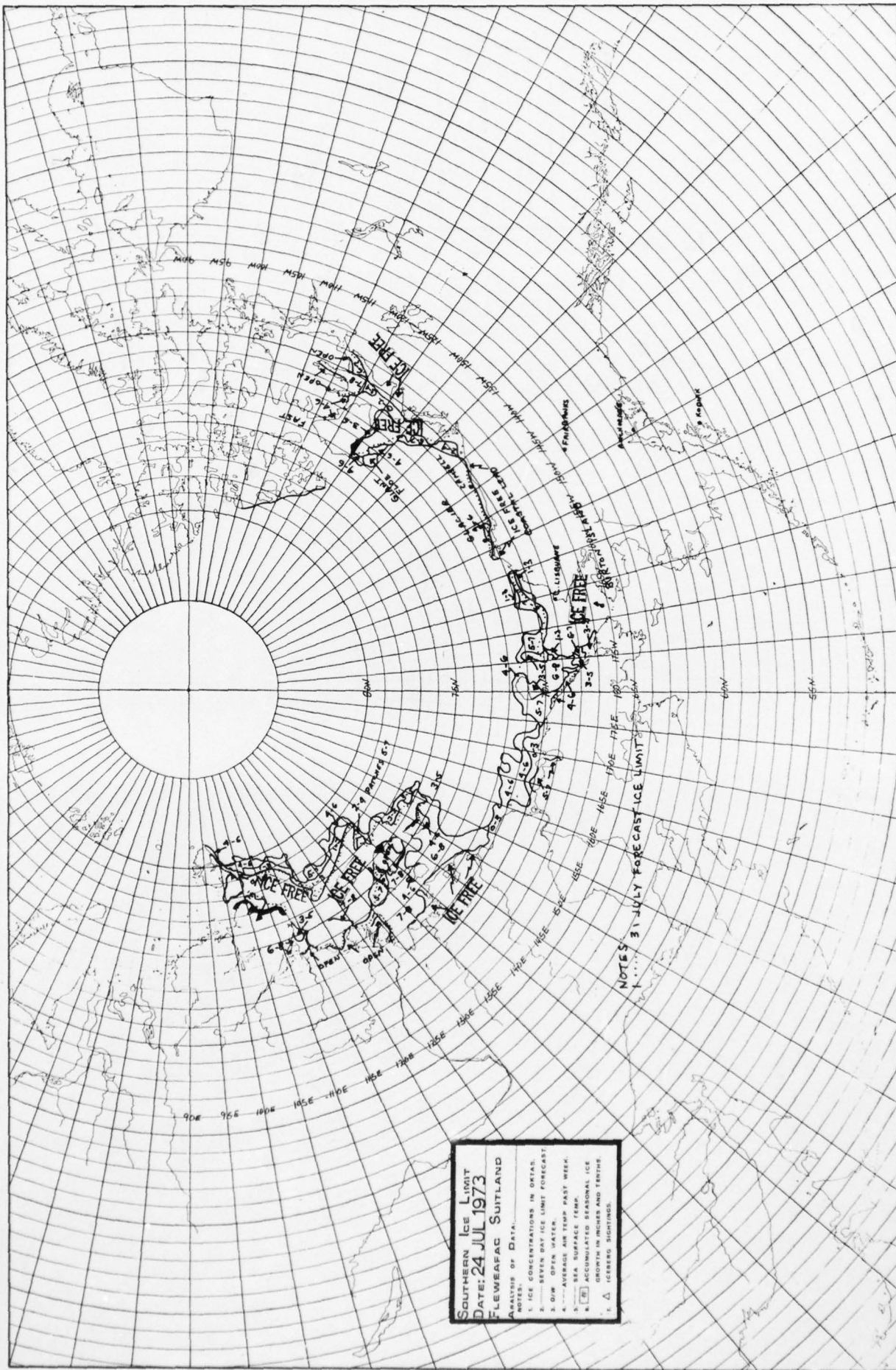
SOUTHERN ICE LIMIT
DATE: 05 JUN 1973
FLEWEEFAC SUTLAND
ANALYSIS OF DATA
1. ICE CONCENTRATIONS IN ORBS
2. SEVEN DAY ICE LIMIT FORECAST
3. OPEN WATER
4. AVERAGE AN TEMP PART WERN
5. SEA SURFACE TEMP
6. ACCUMULATED SEASONAL ICE
7. ICEBERG
8. ICEBERG TENDERS

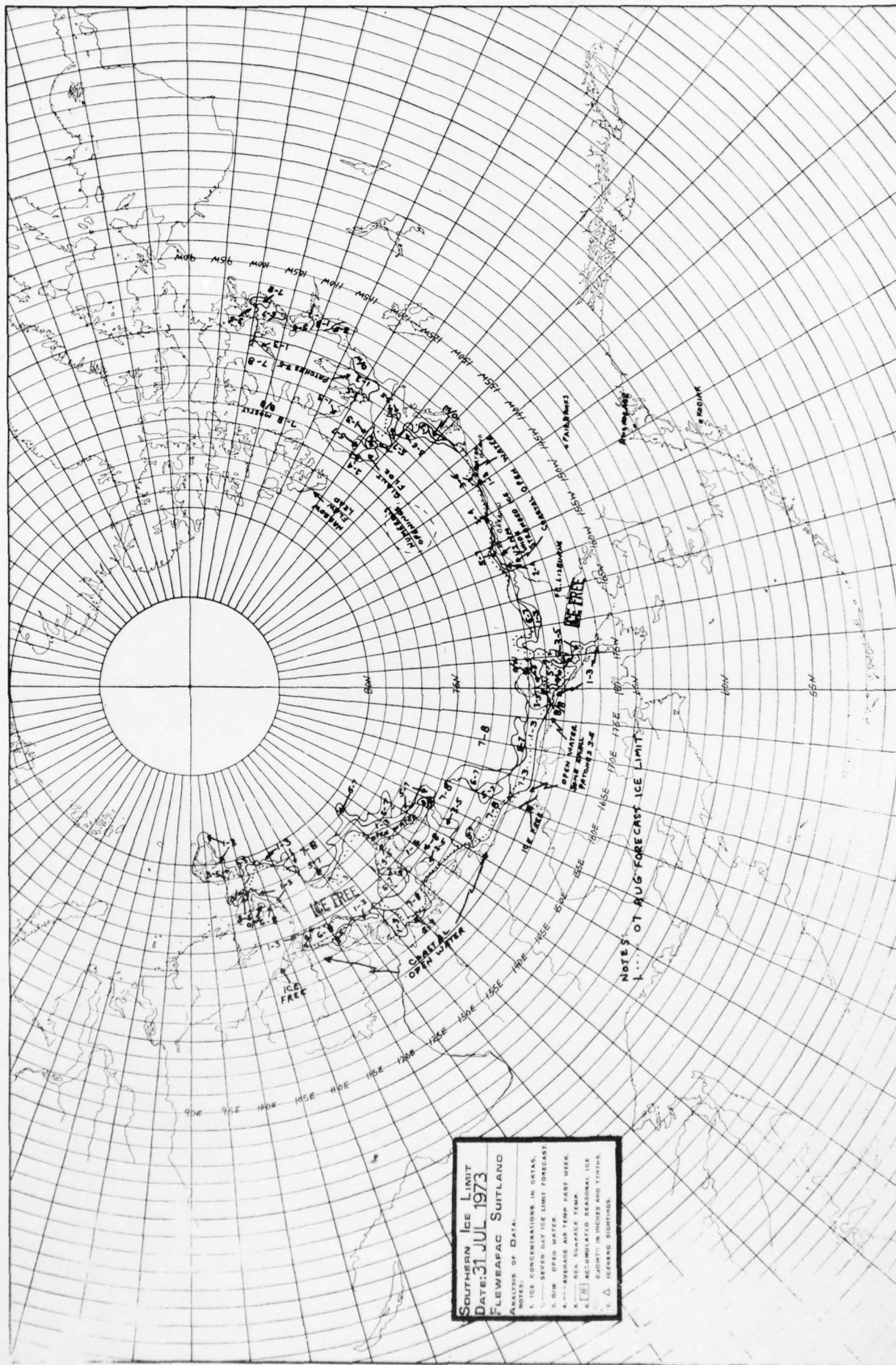
CONSIDERABLE WATER SURGE
COULD BE EXPECTED DURING THE NEXT
24 HOURS OF 15th MAY 1973
15th 15th 15th

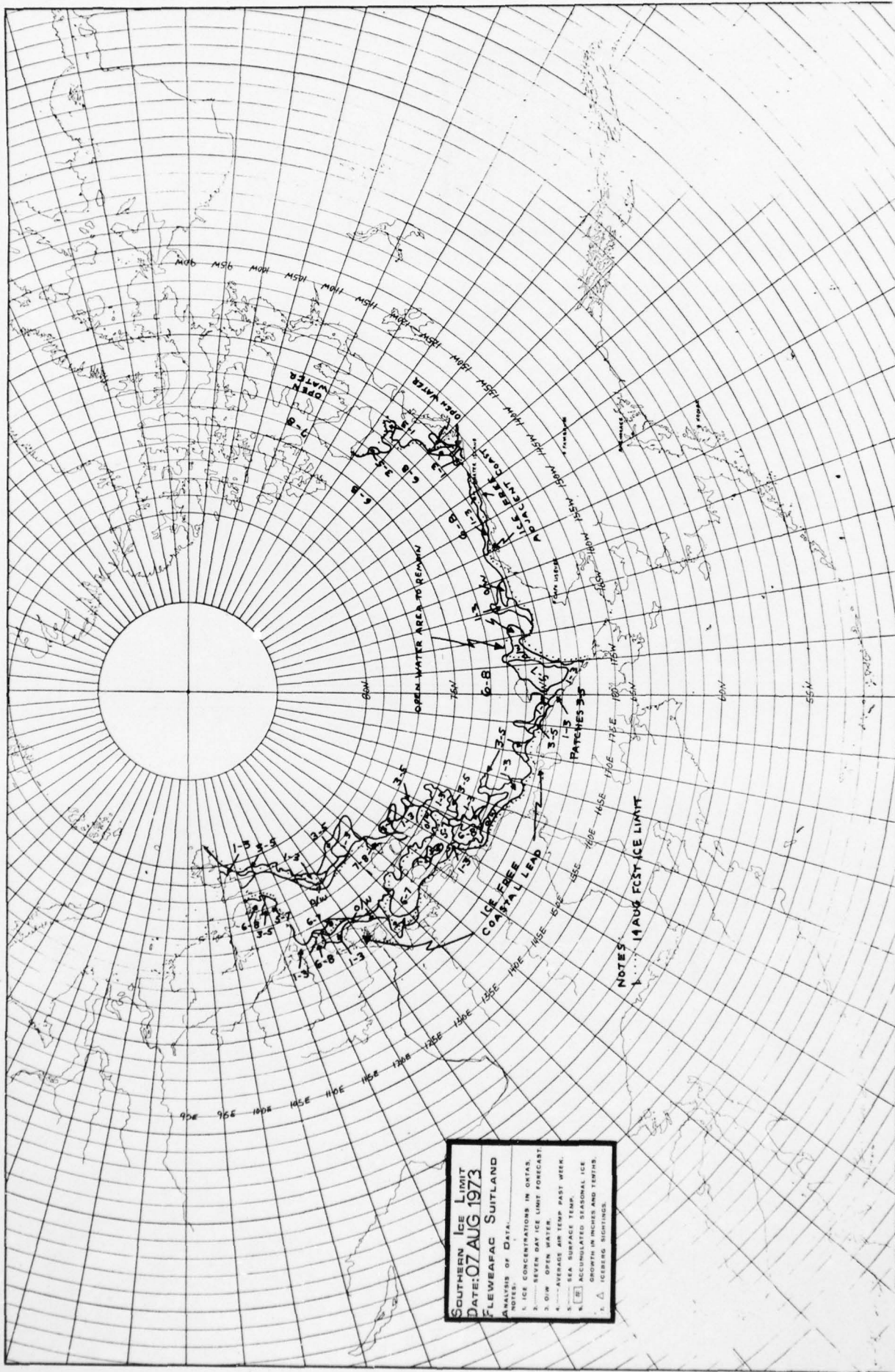


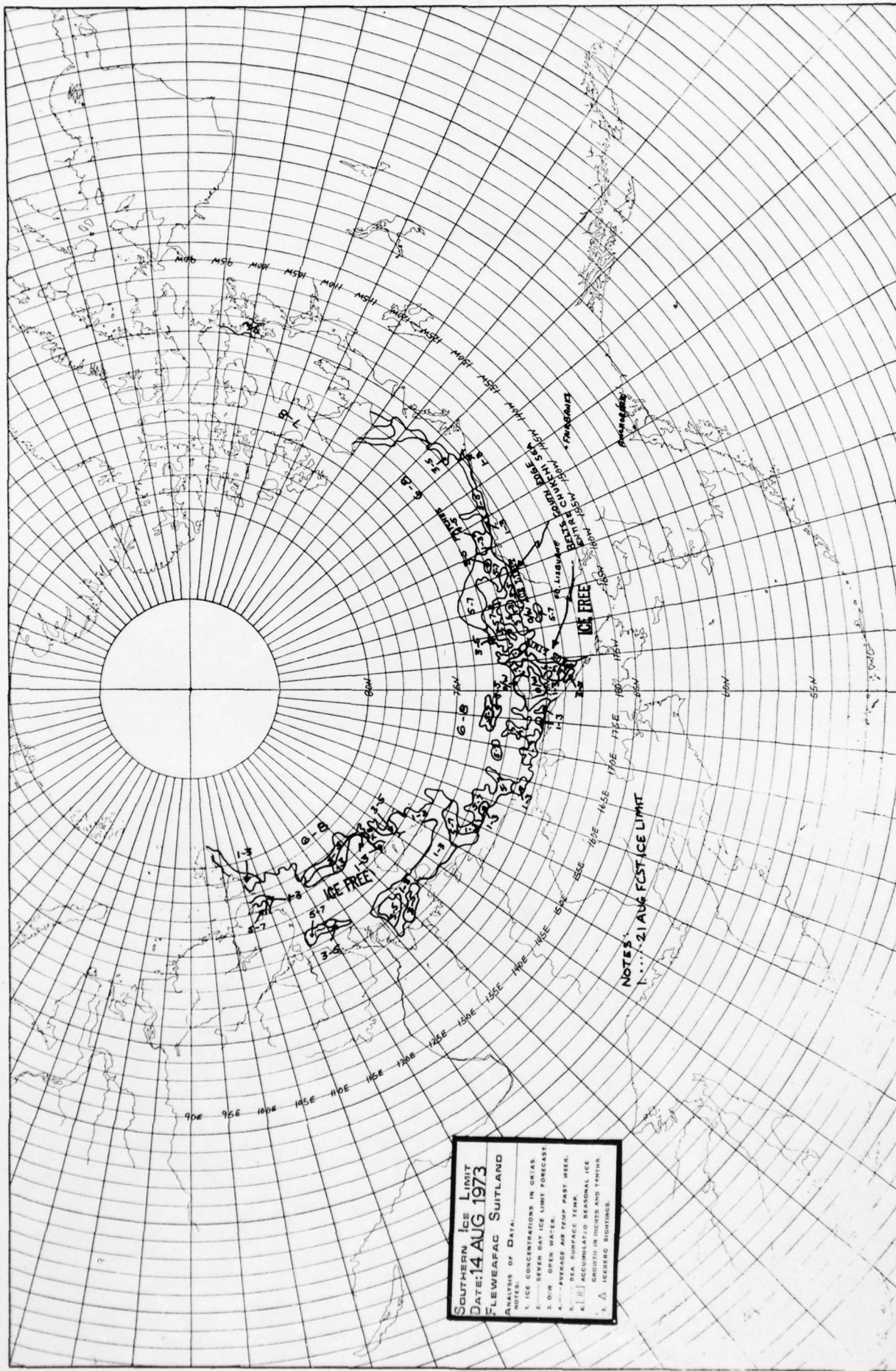


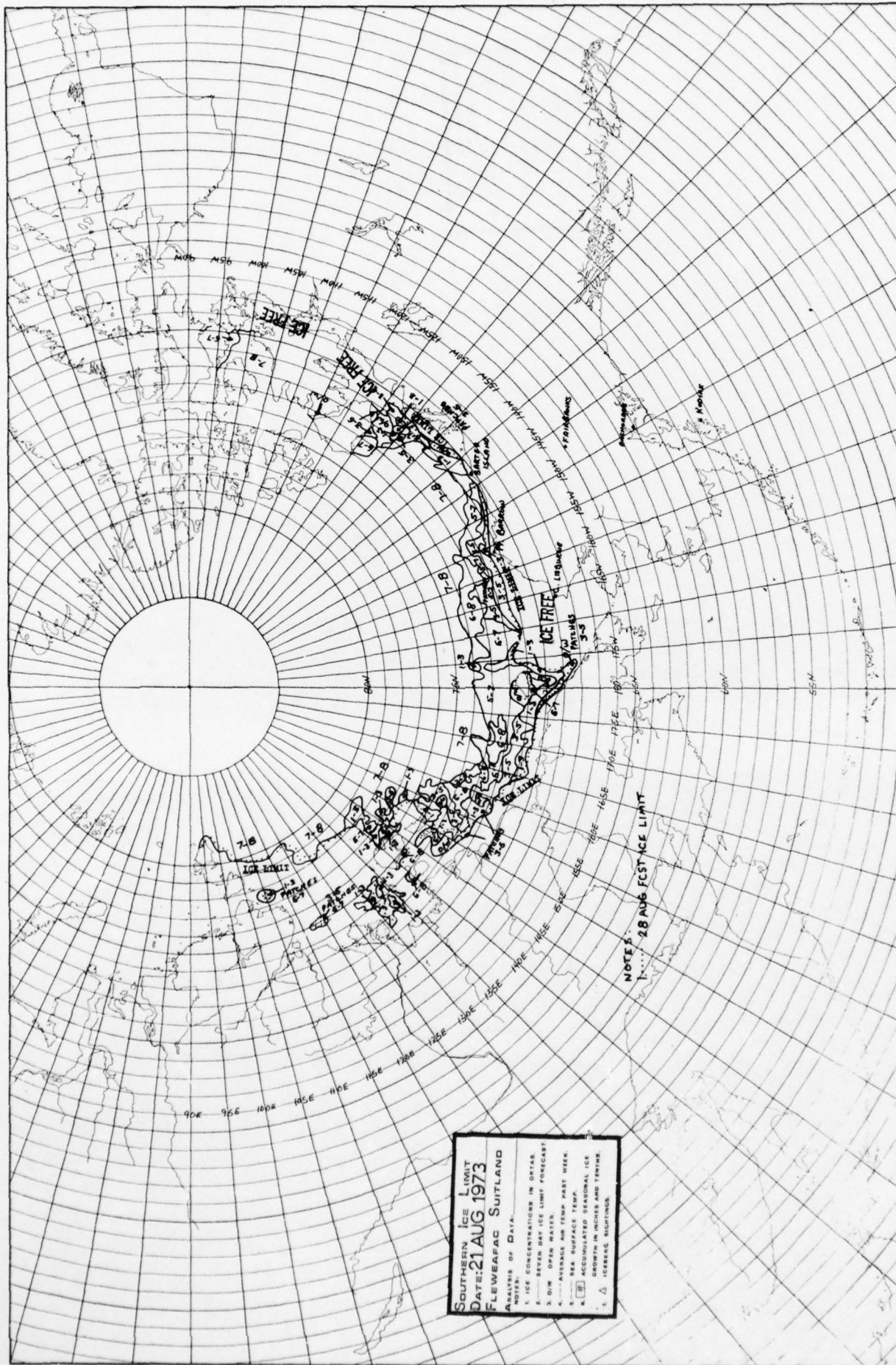


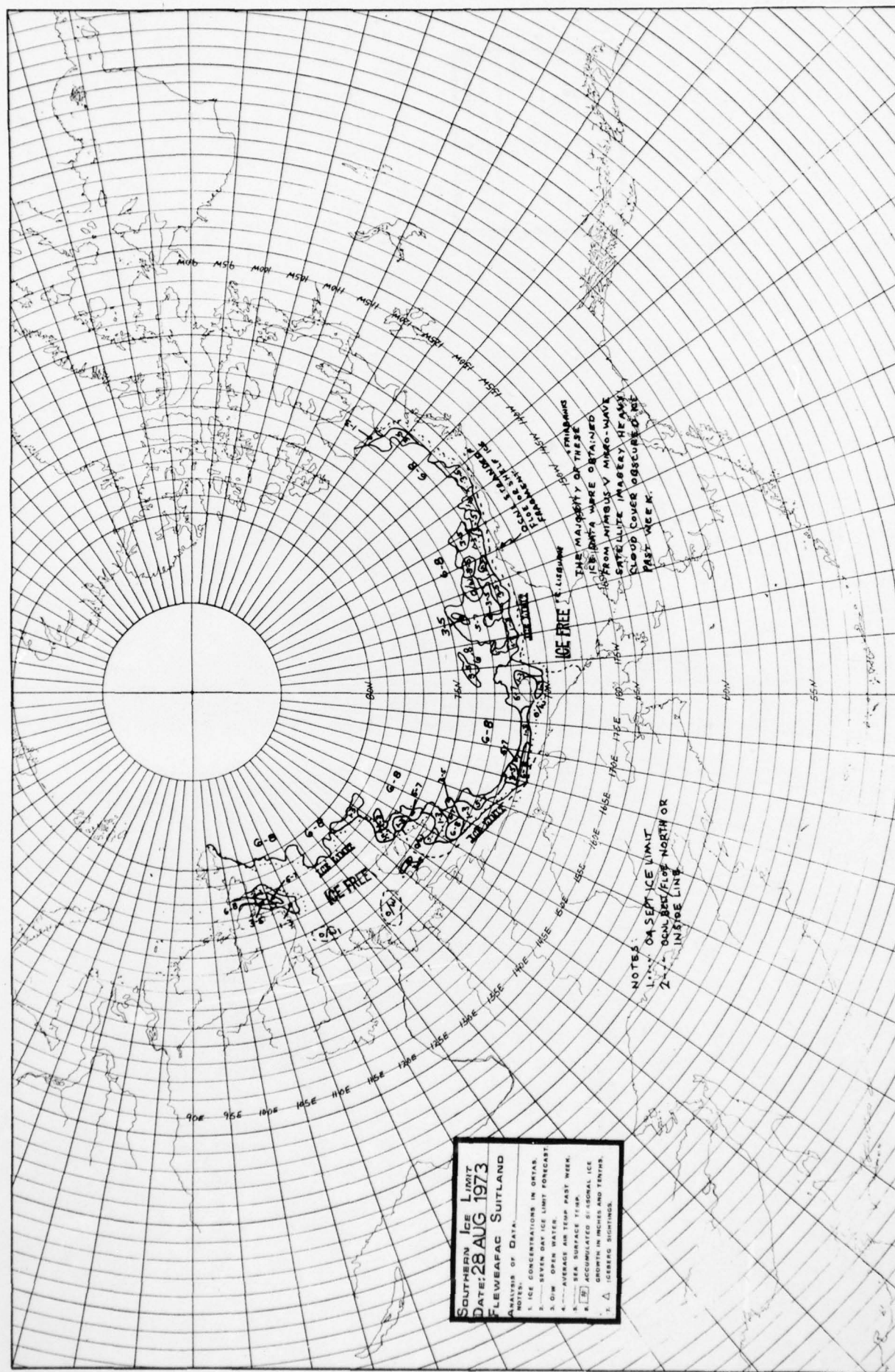


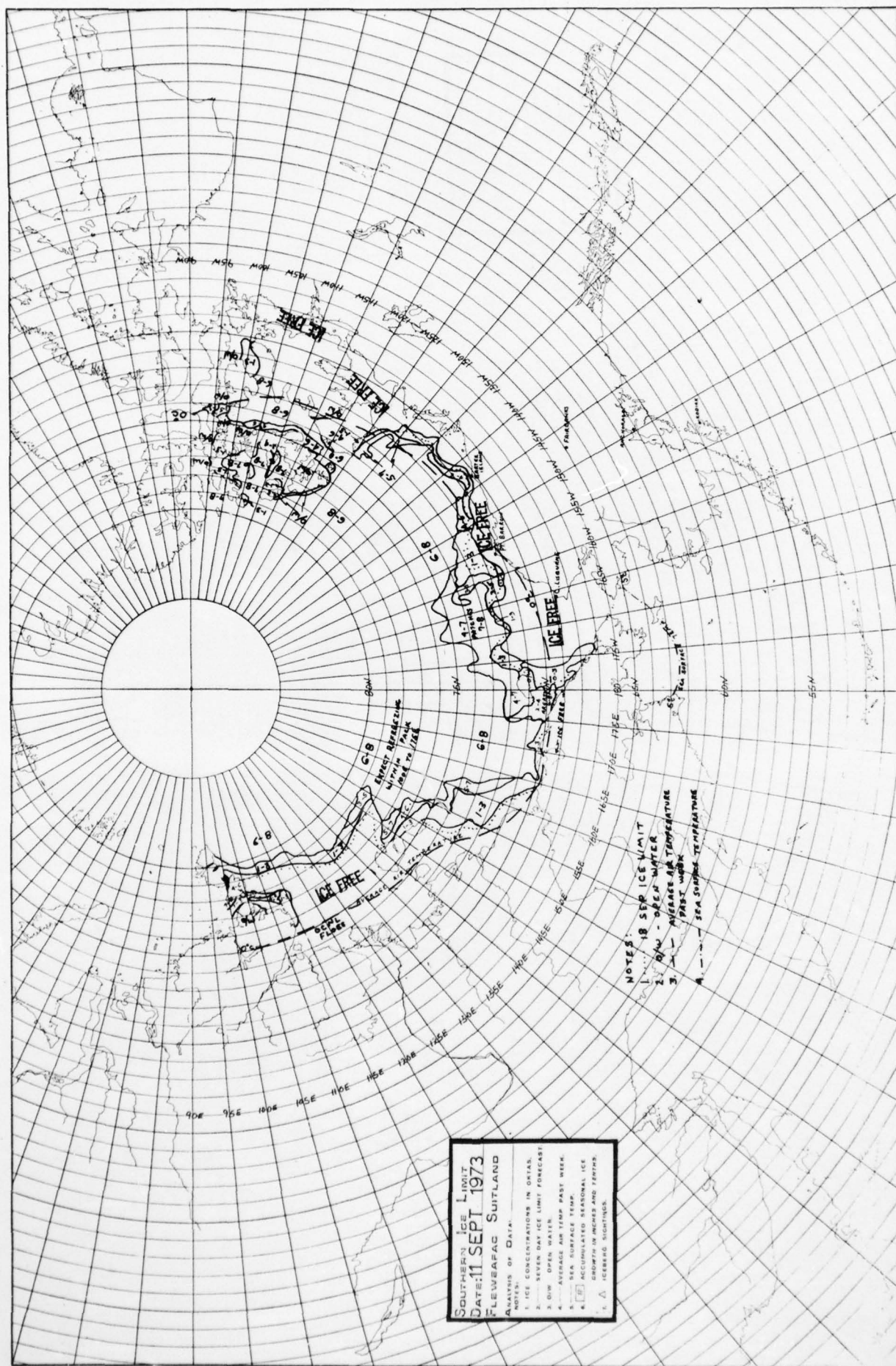


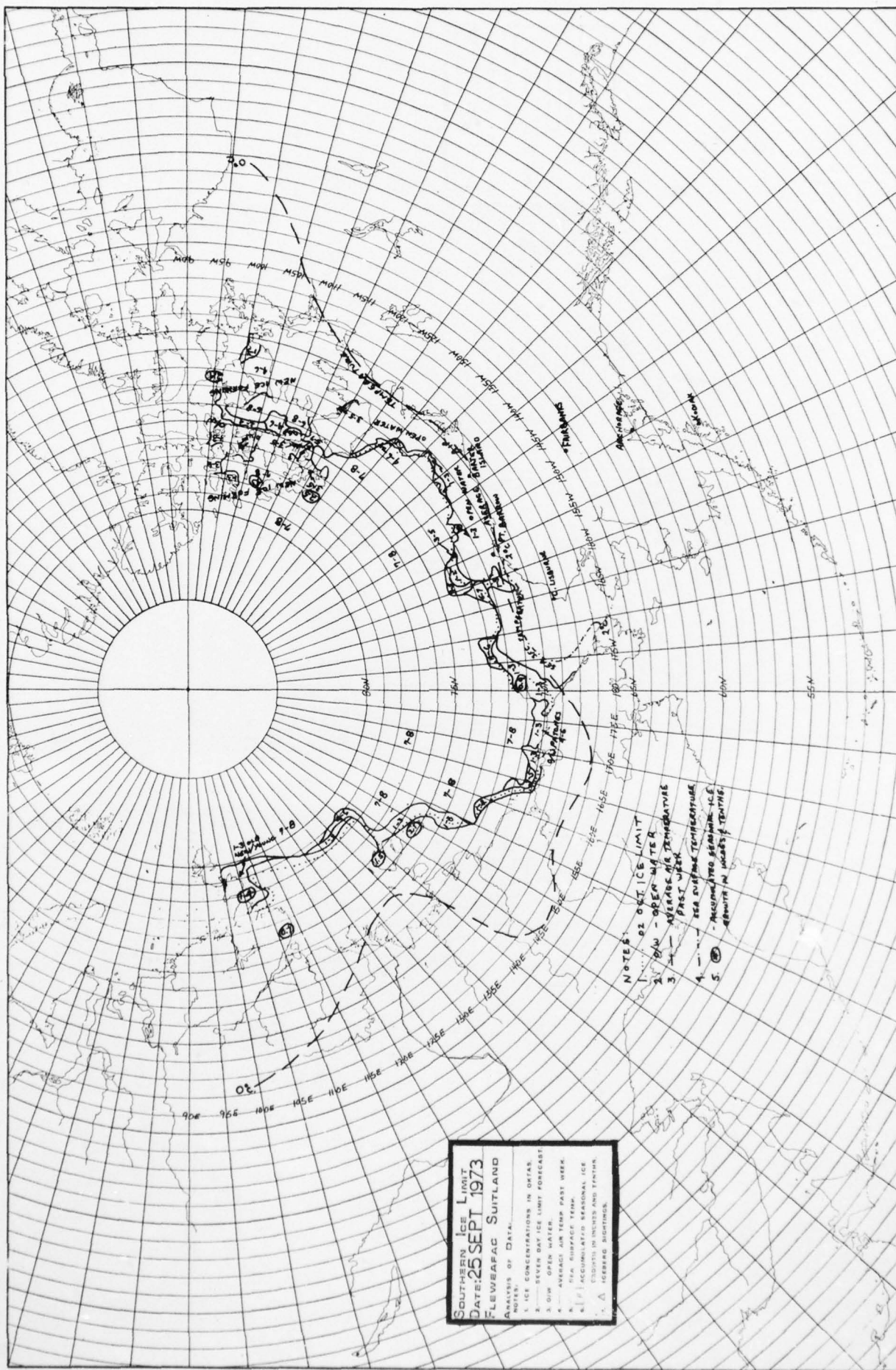


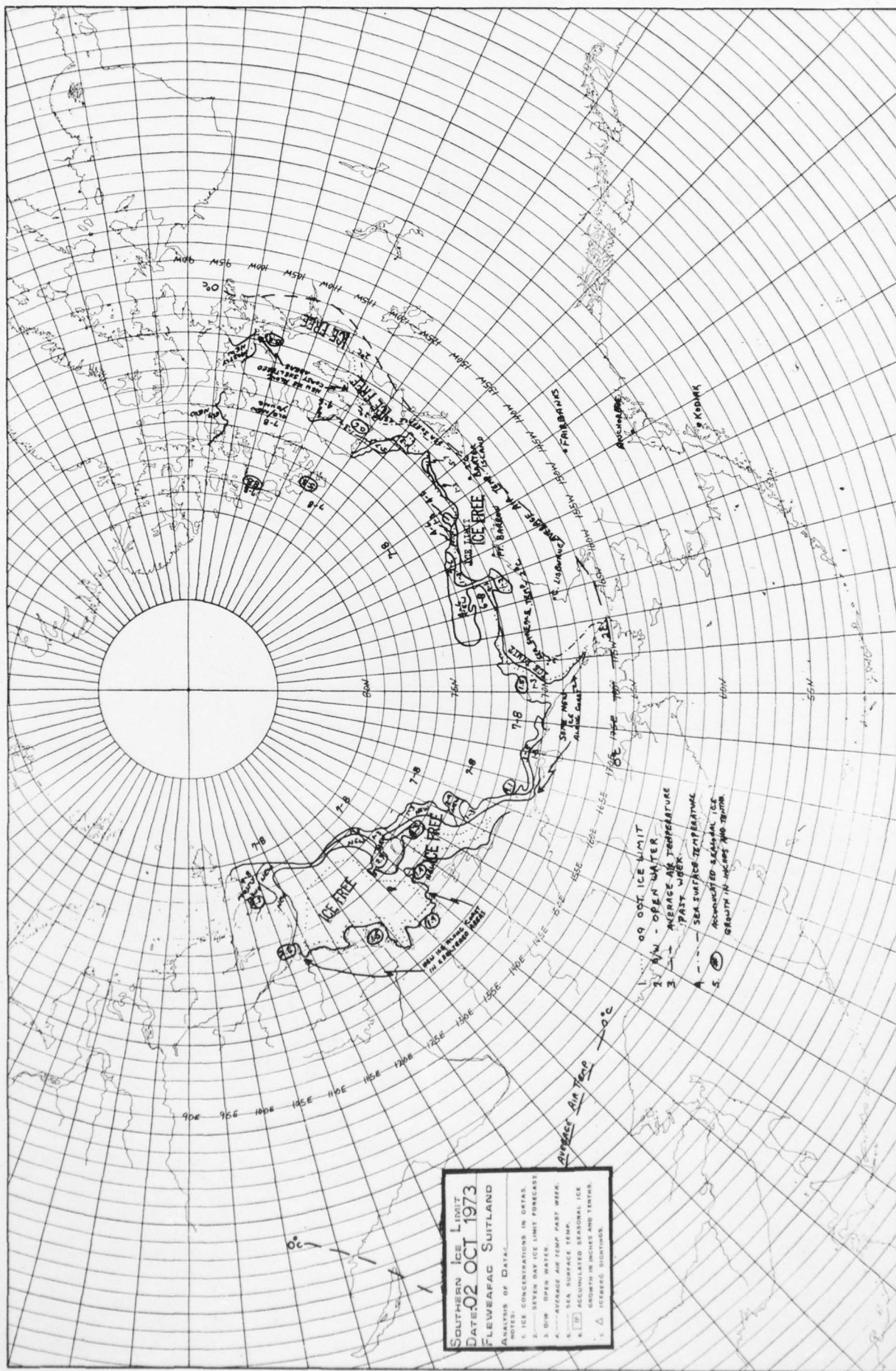


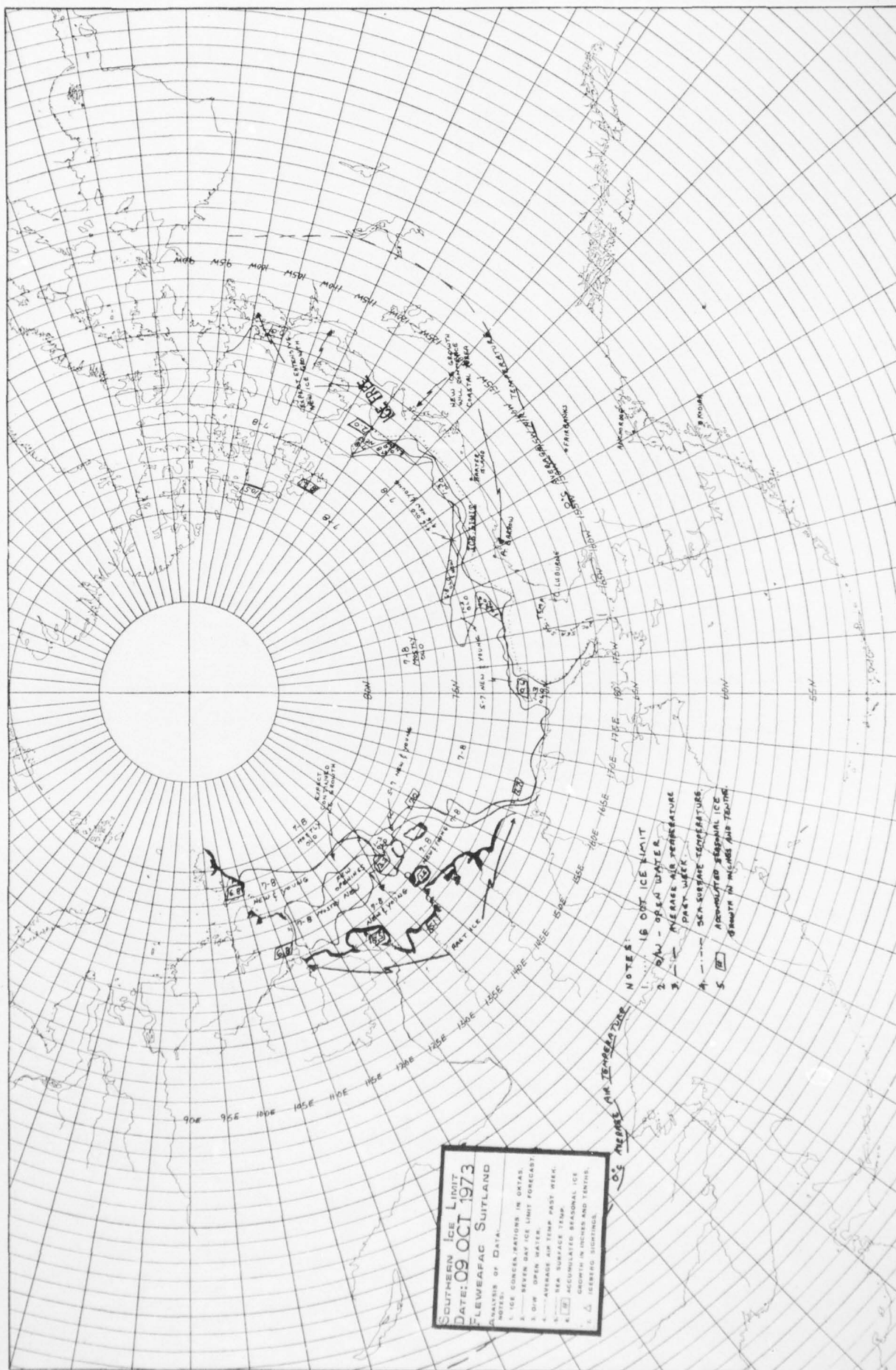












AD-A033 345

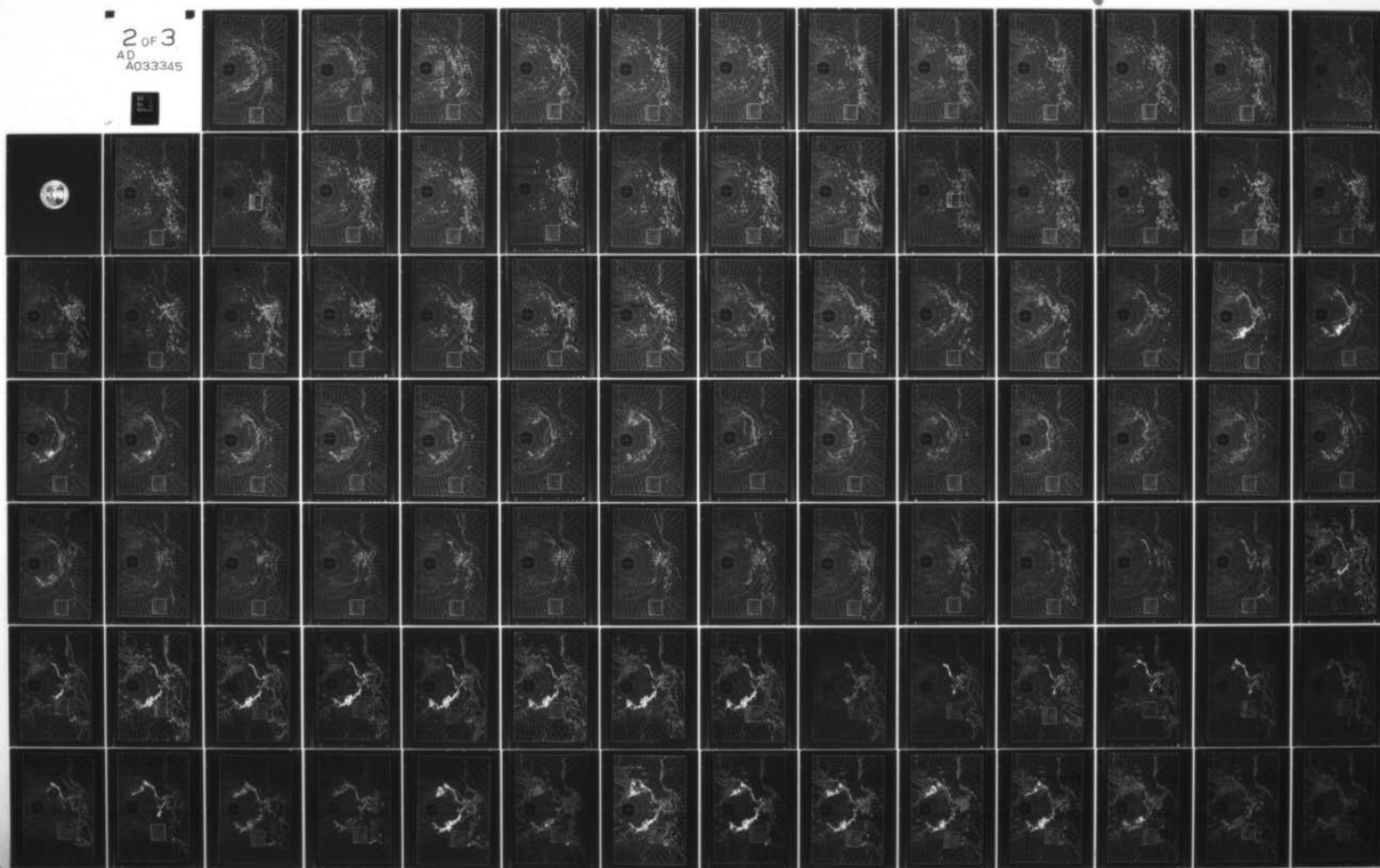
FLEET WEATHER FACILITY SUITLAND MD
WESTERN ARCTIC SEA ICE ANALYSES 1972-1975.(U)
JUN 76

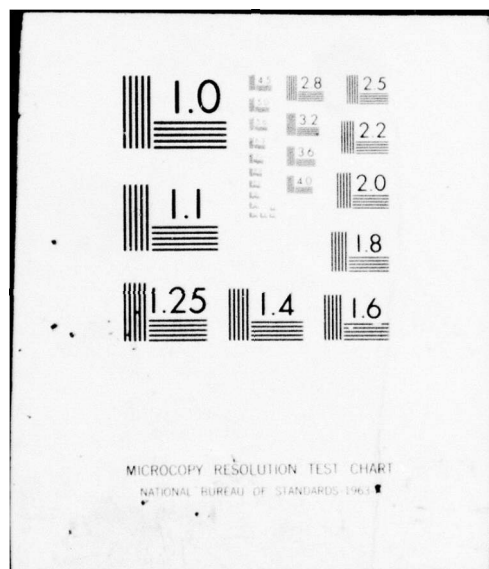
F/6 8/12

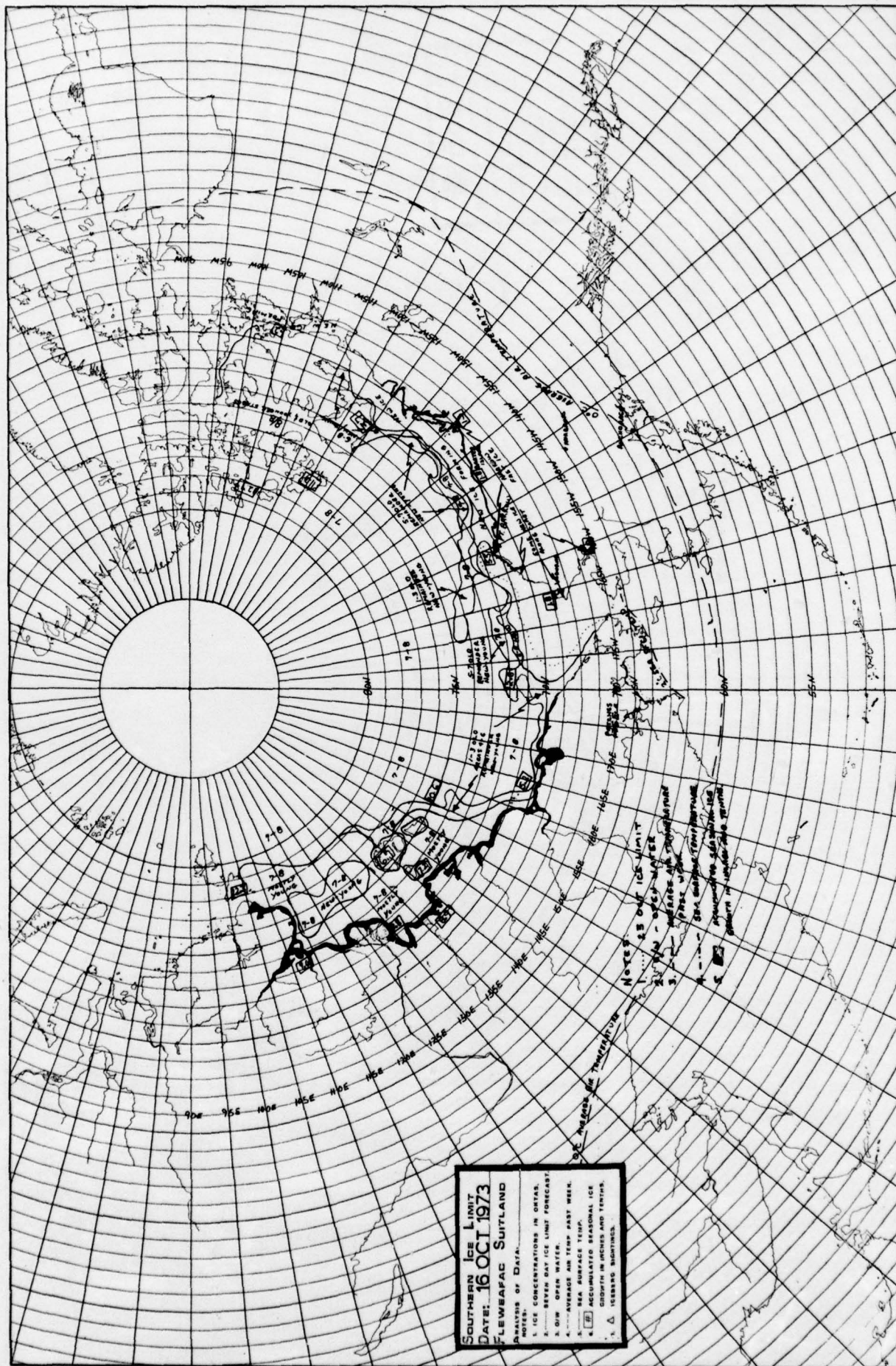
UNCLASSIFIED

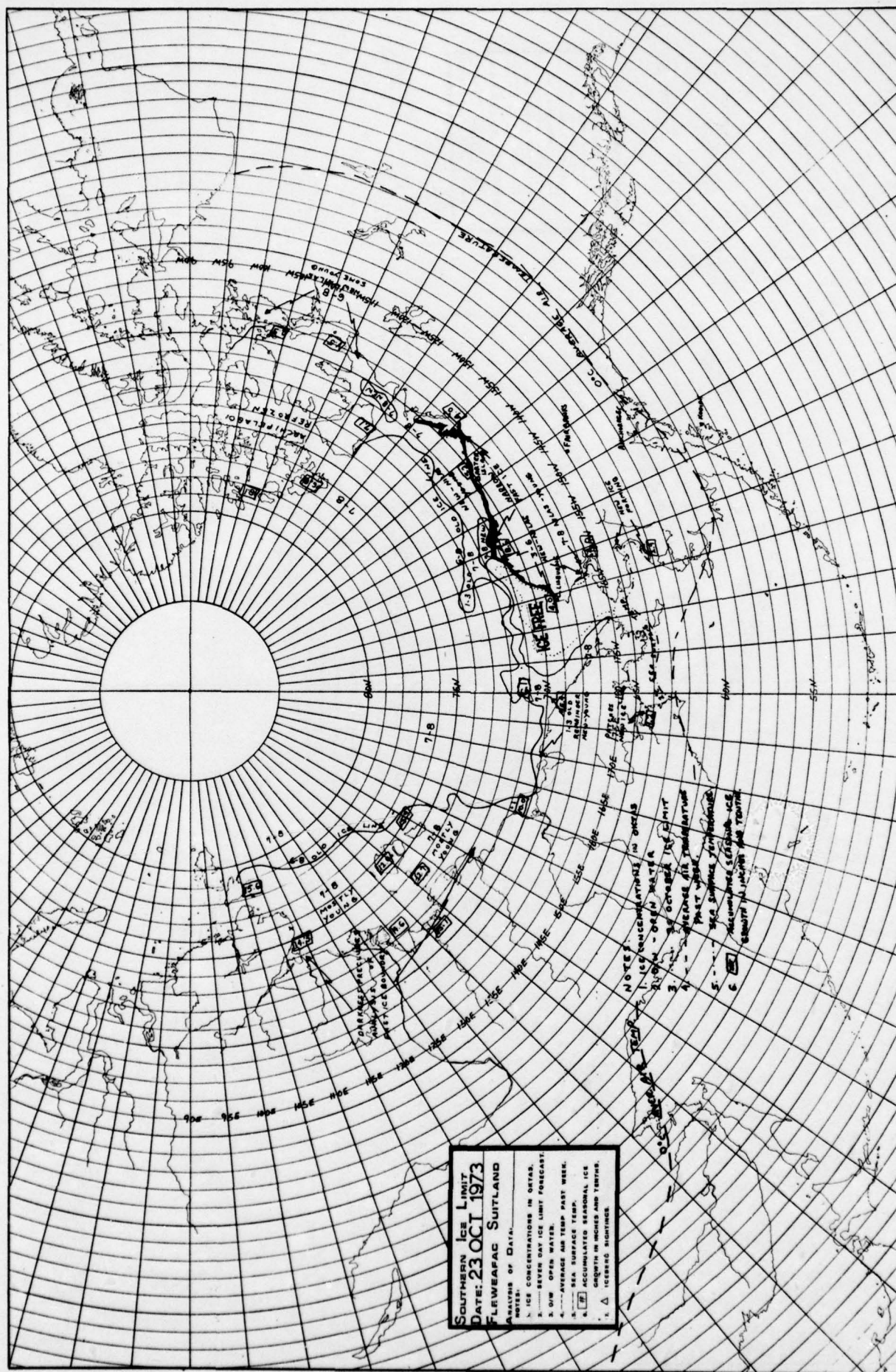
NL

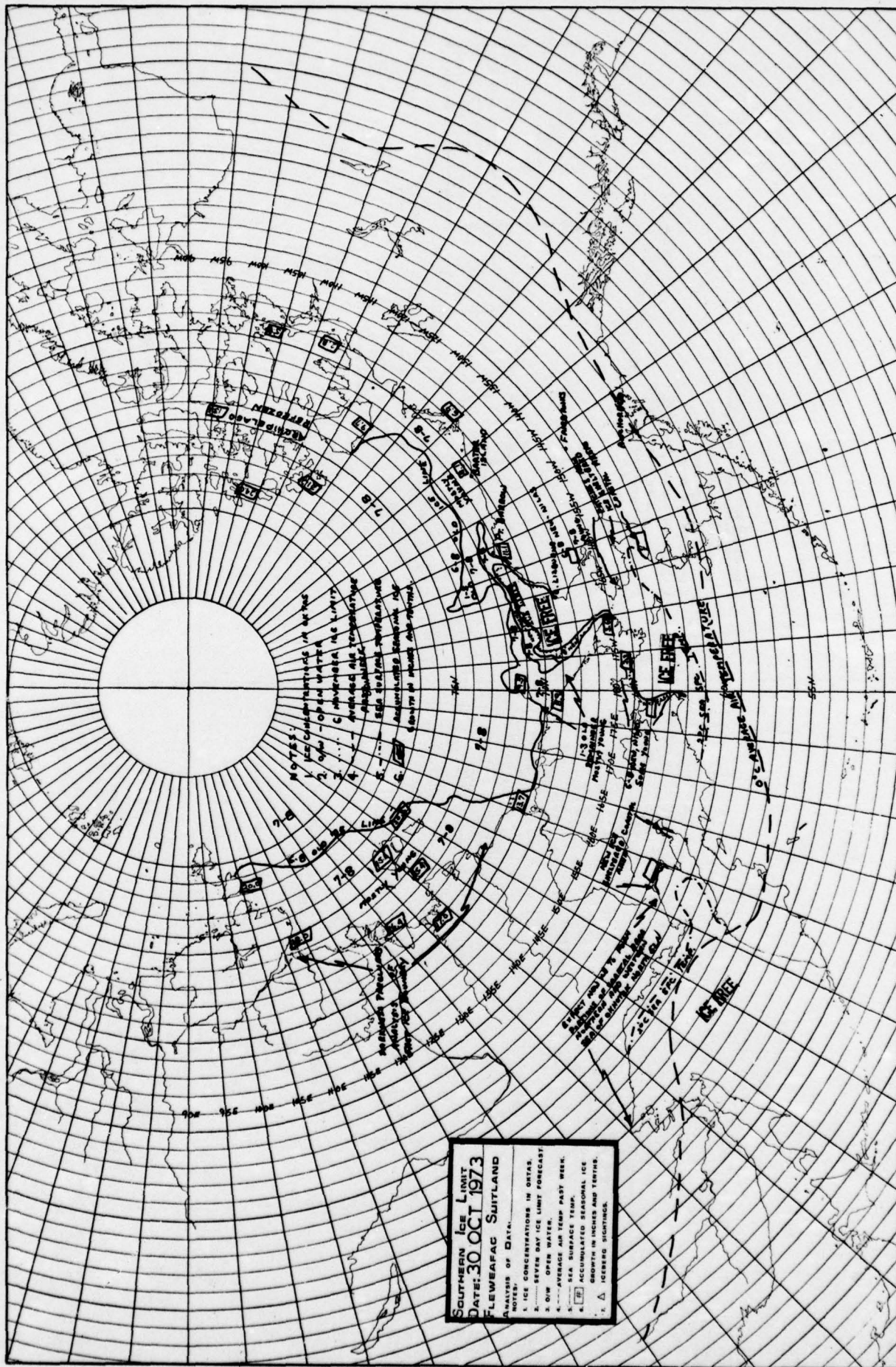
2 OF 3
AD
A033345

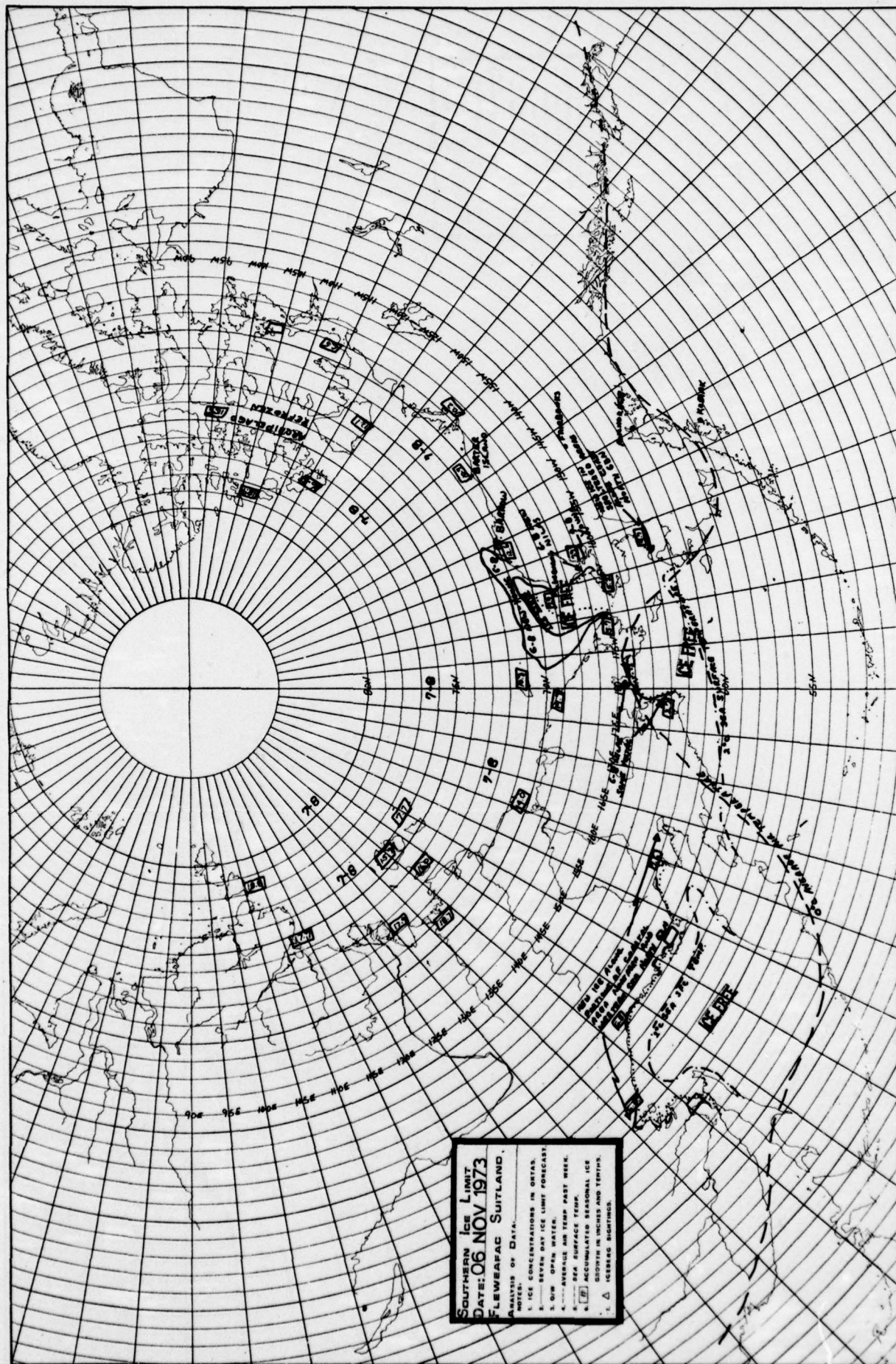


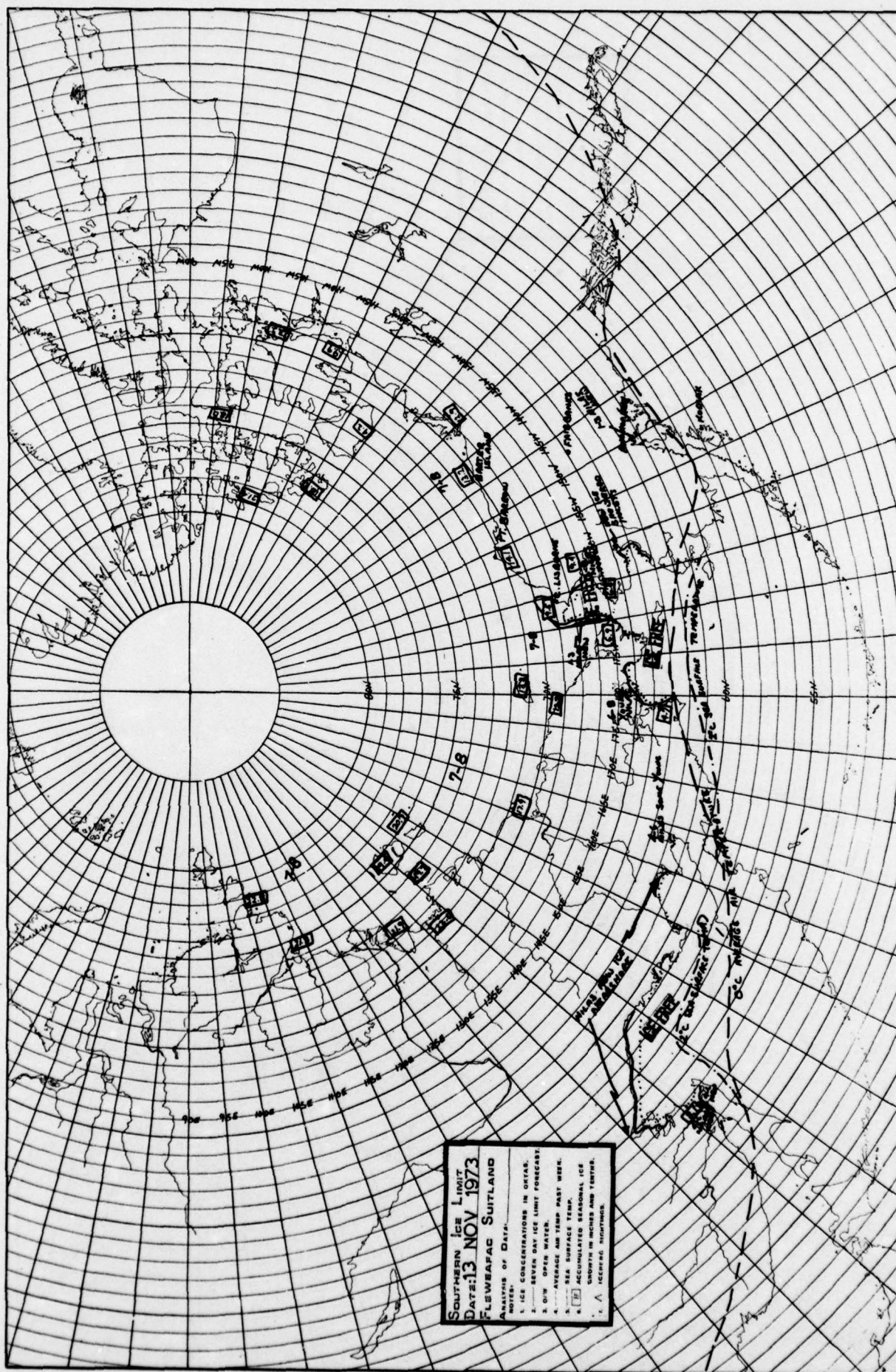


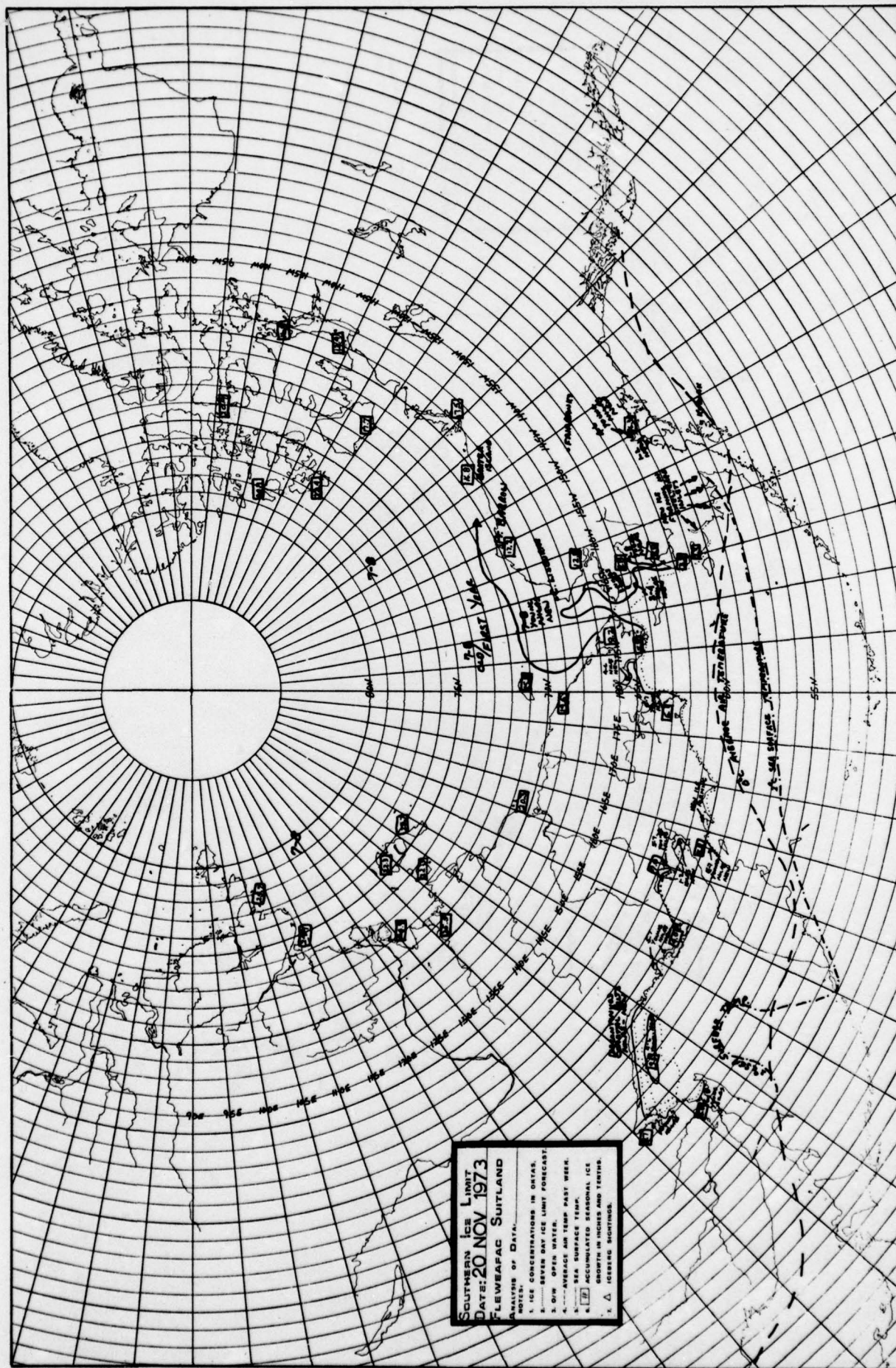


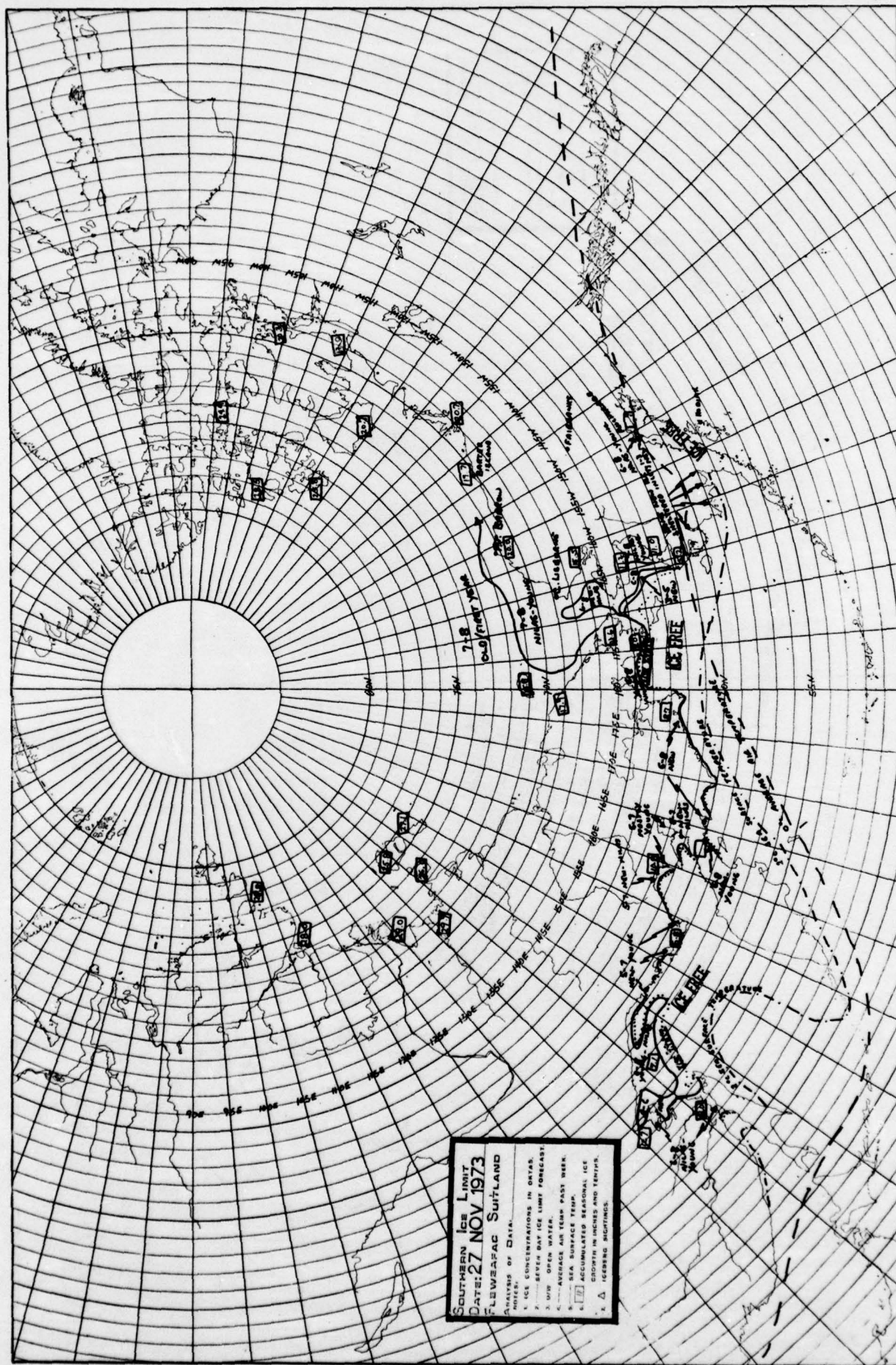


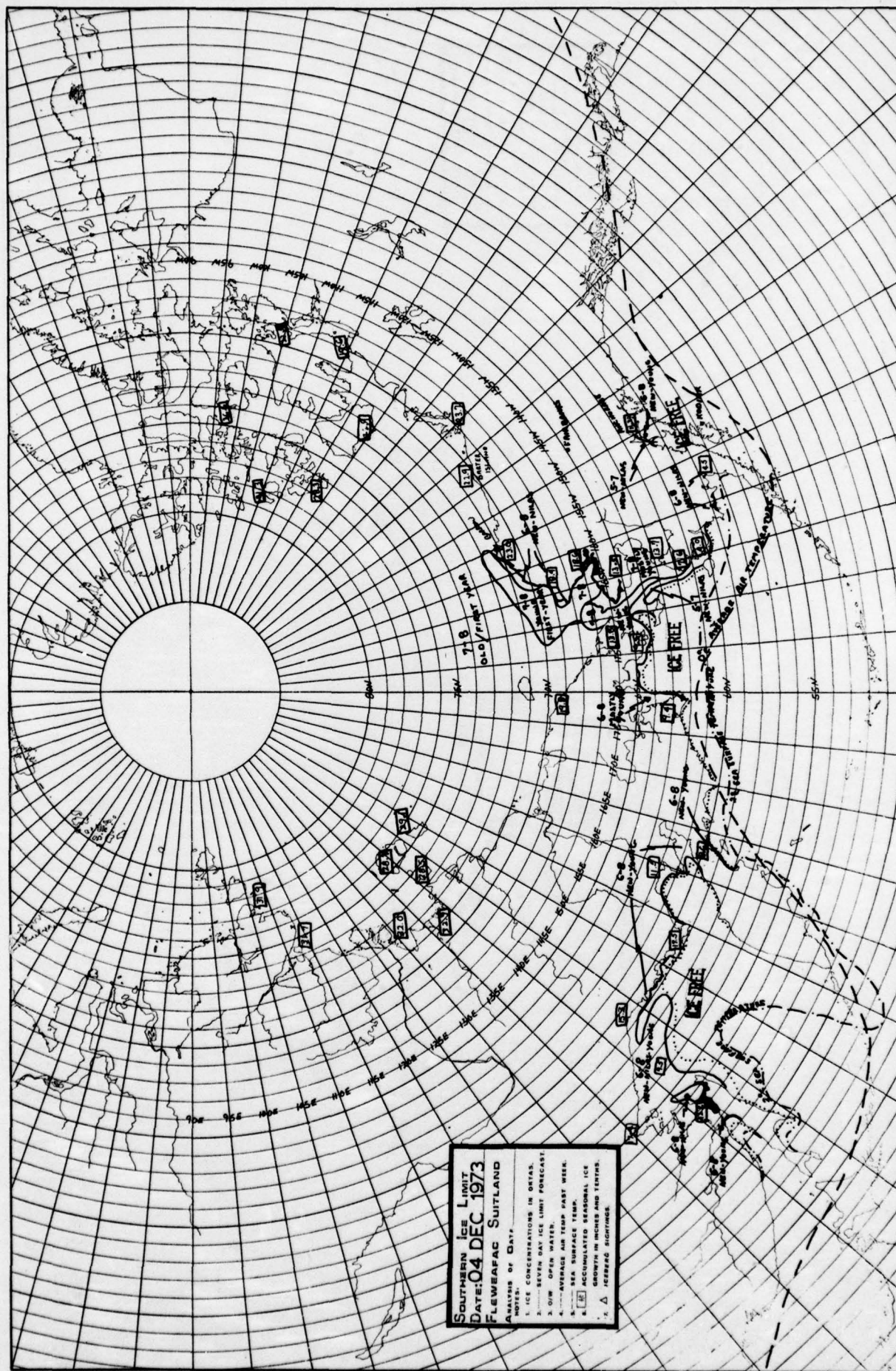


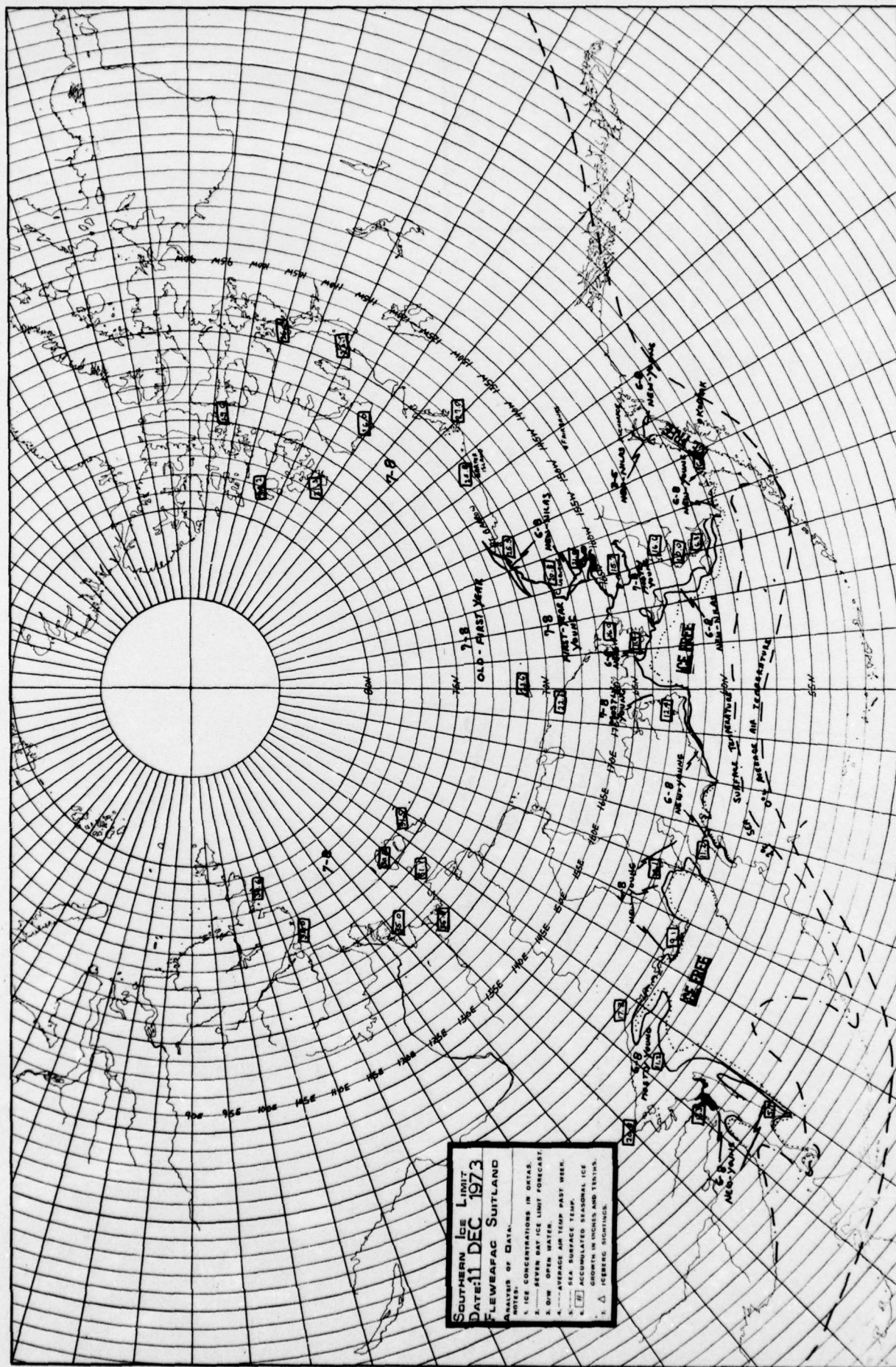








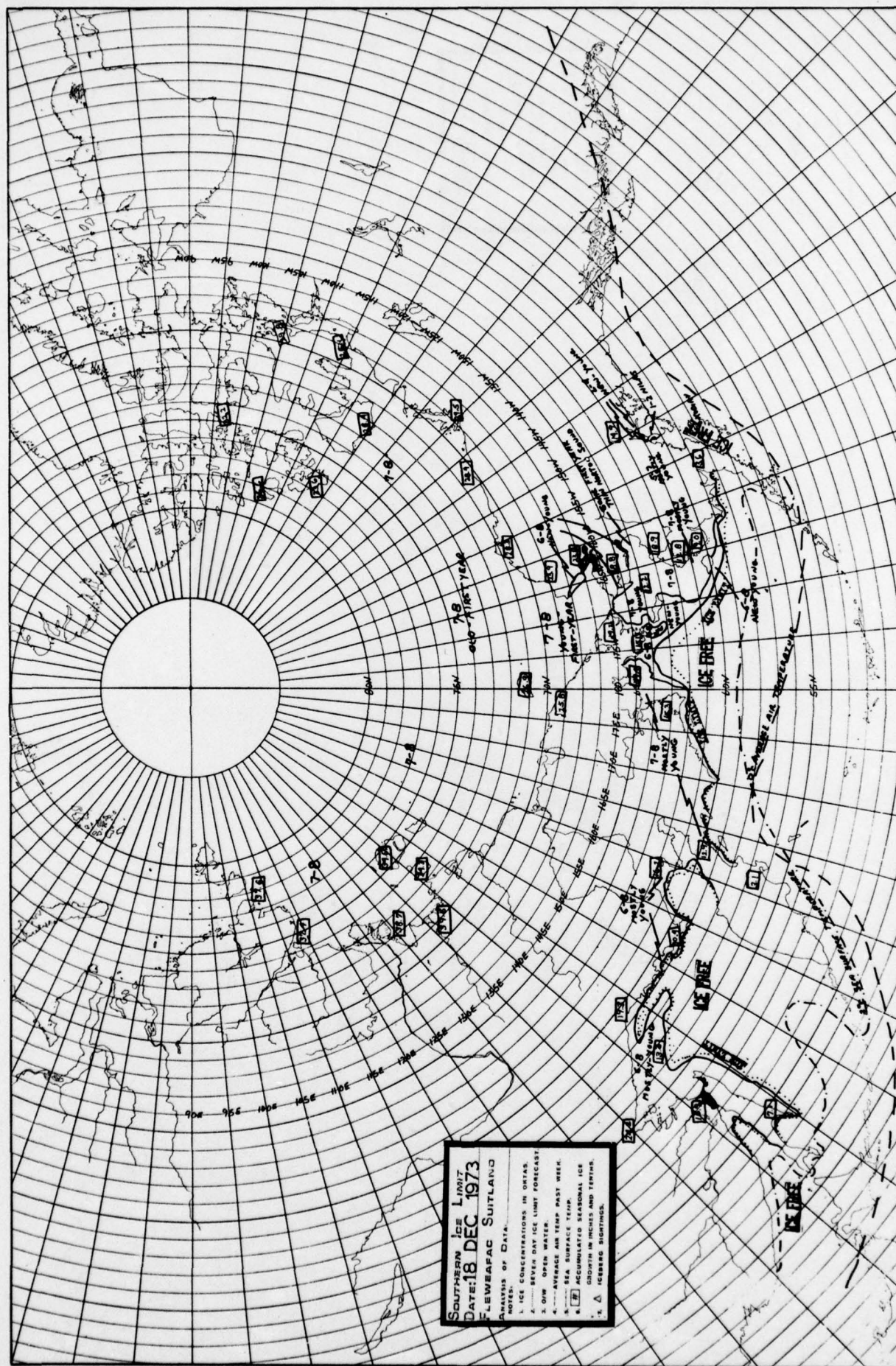


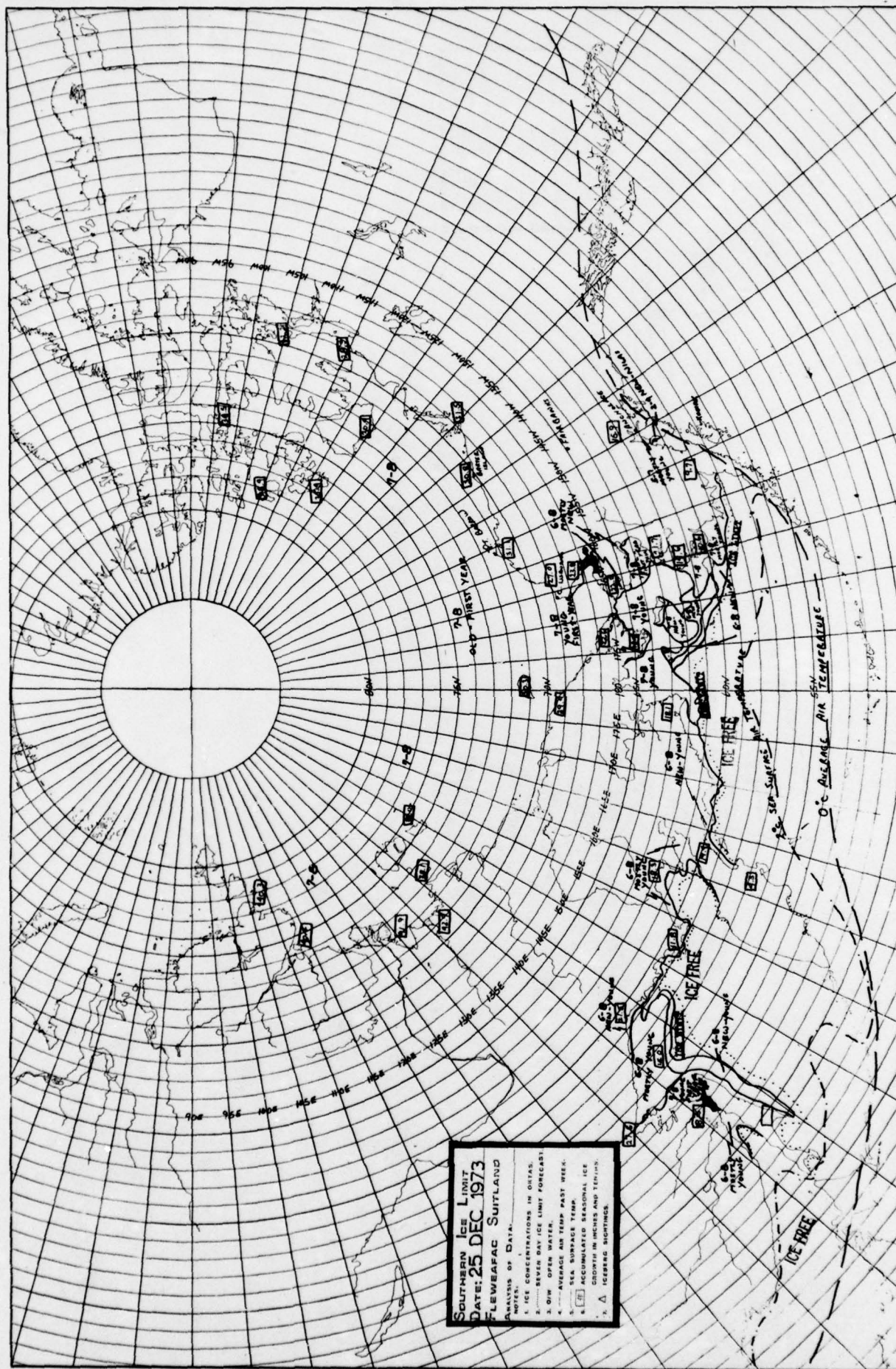


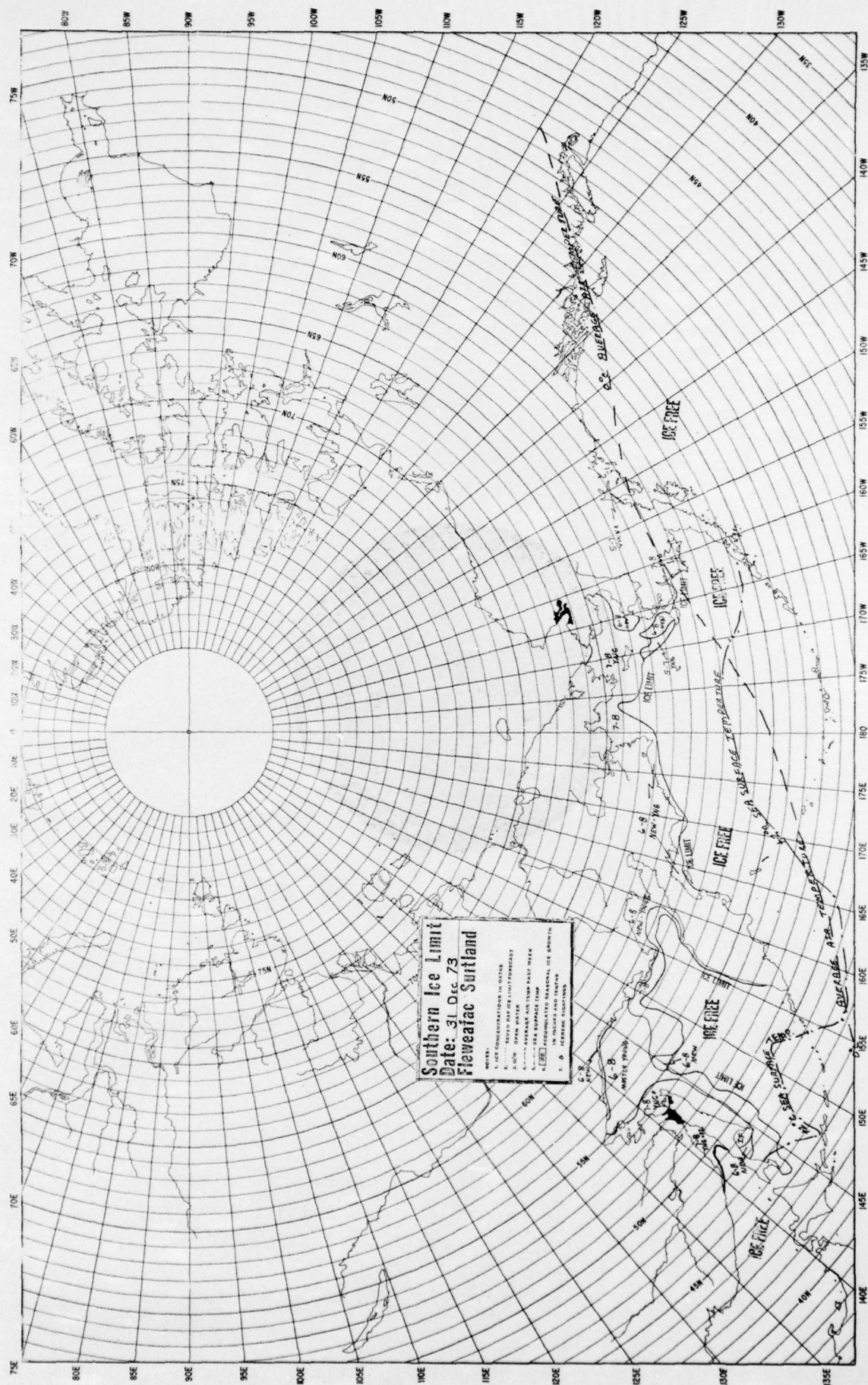
SOUTHERN ICE LIMIT
DATE: 11 DEC 1973
FLWFAFAC SUTLAND

NOTES:

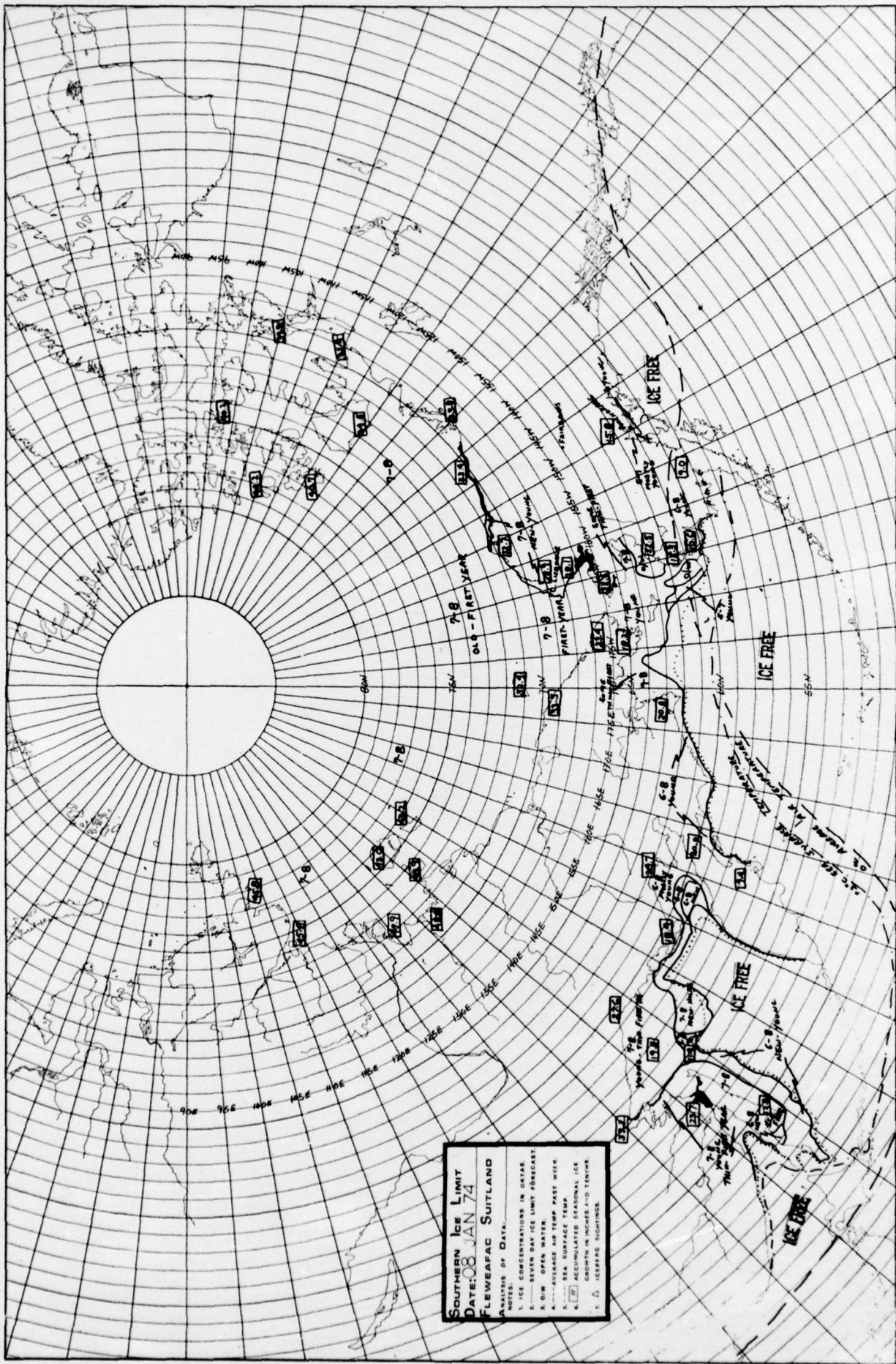
- 1. ICE CONCENTRATIONS IN DATA.
- 2. SEVEN DAY ICE LIMIT FORECAST.
- 3. OPEN WATER.
- 4. AVERAGE AIR TEMP PAST WEEK.
- 5. SURFACE TEMP.
- 6. SUBMERGED SEASONAL ICE.
- 7. ICEBERG, SIGNIFICANT.

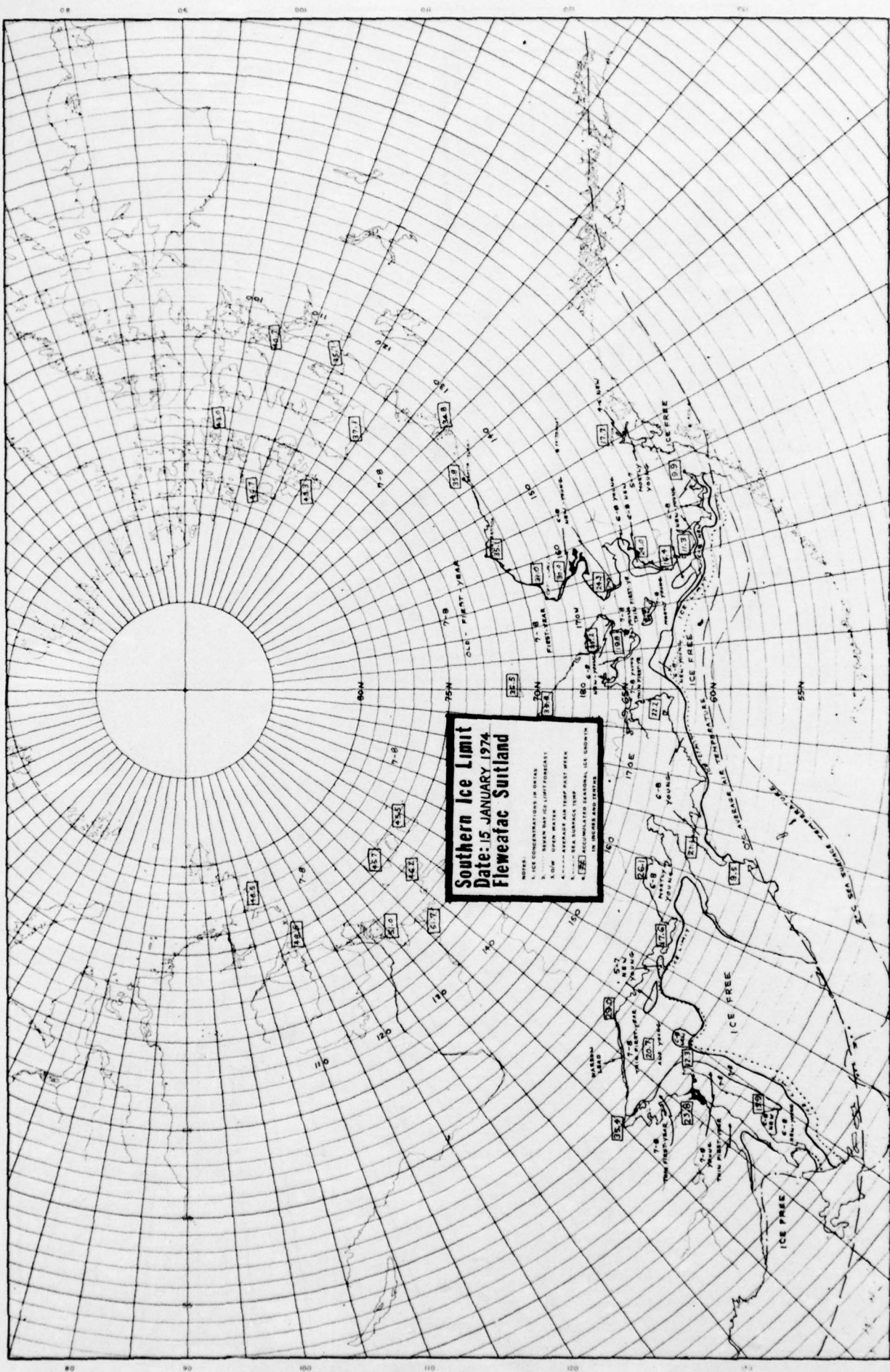


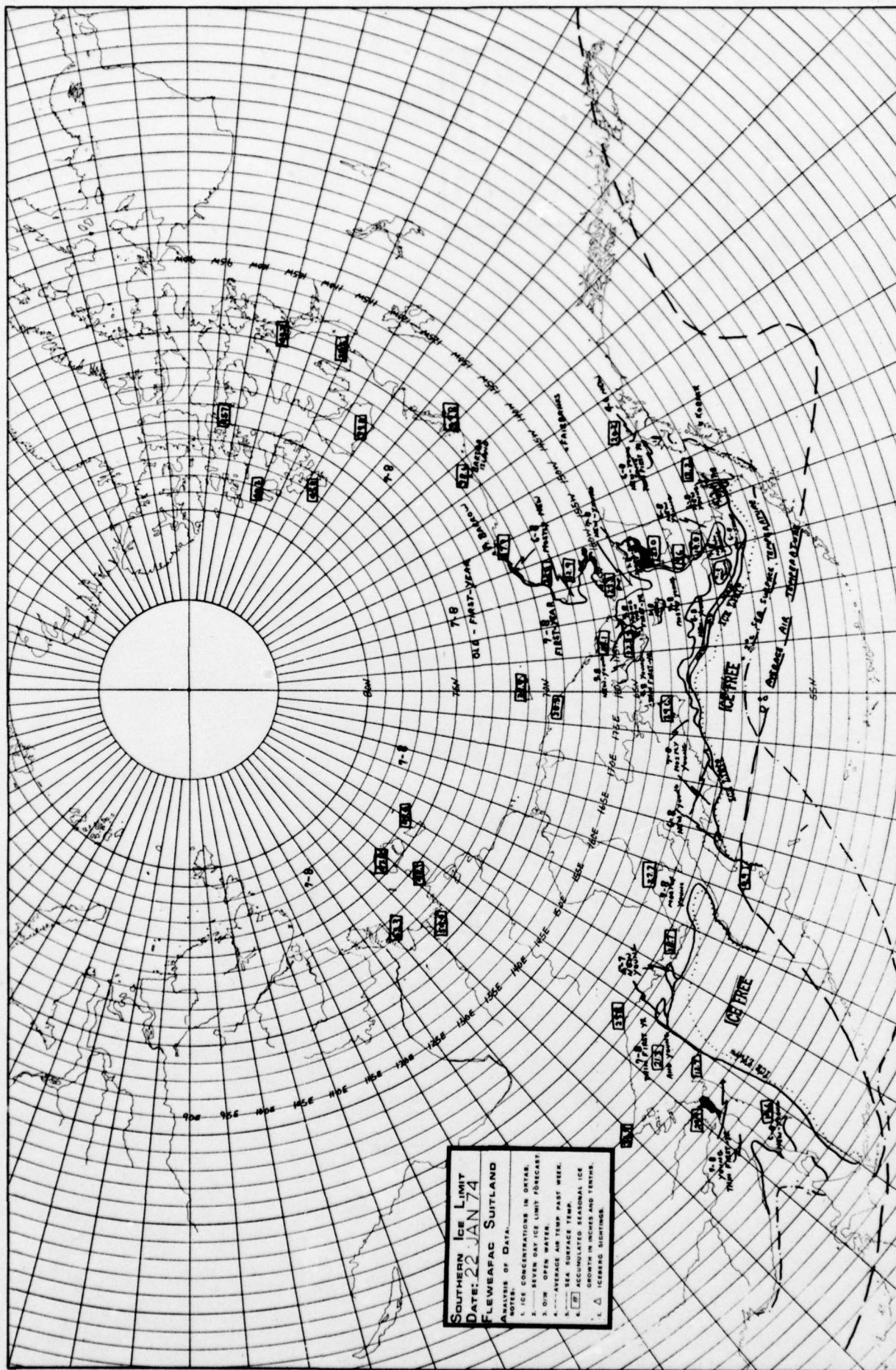


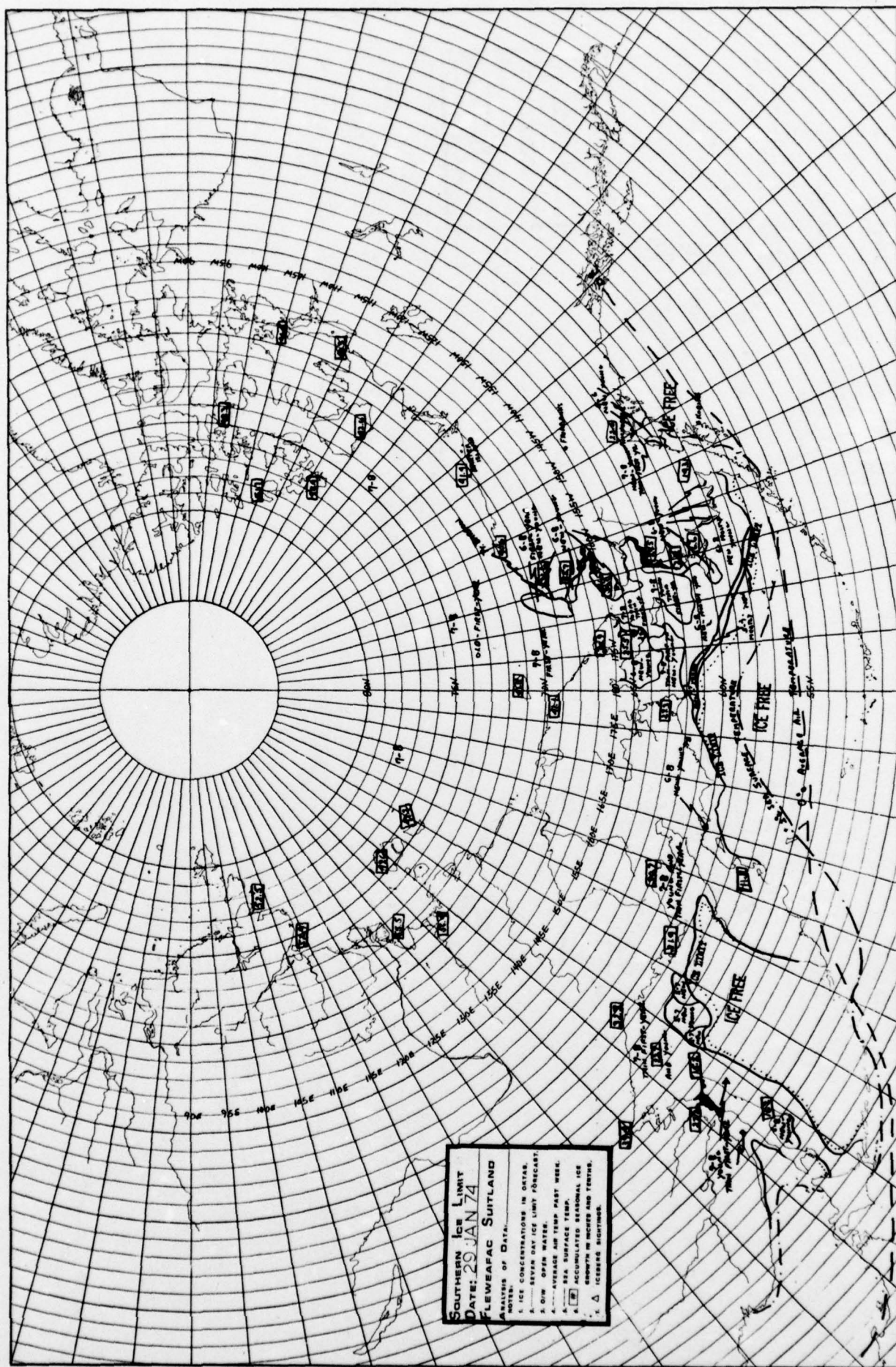


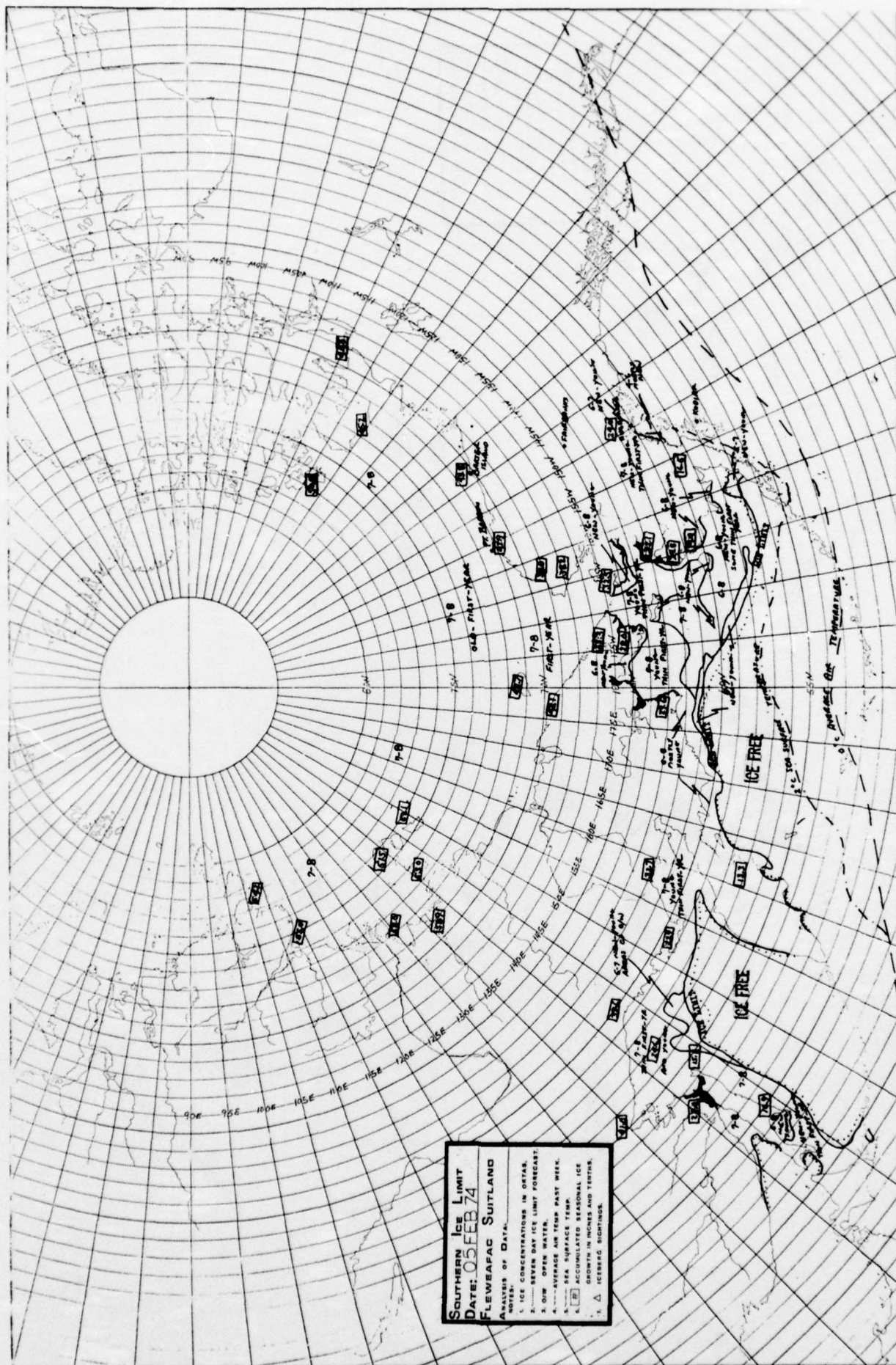


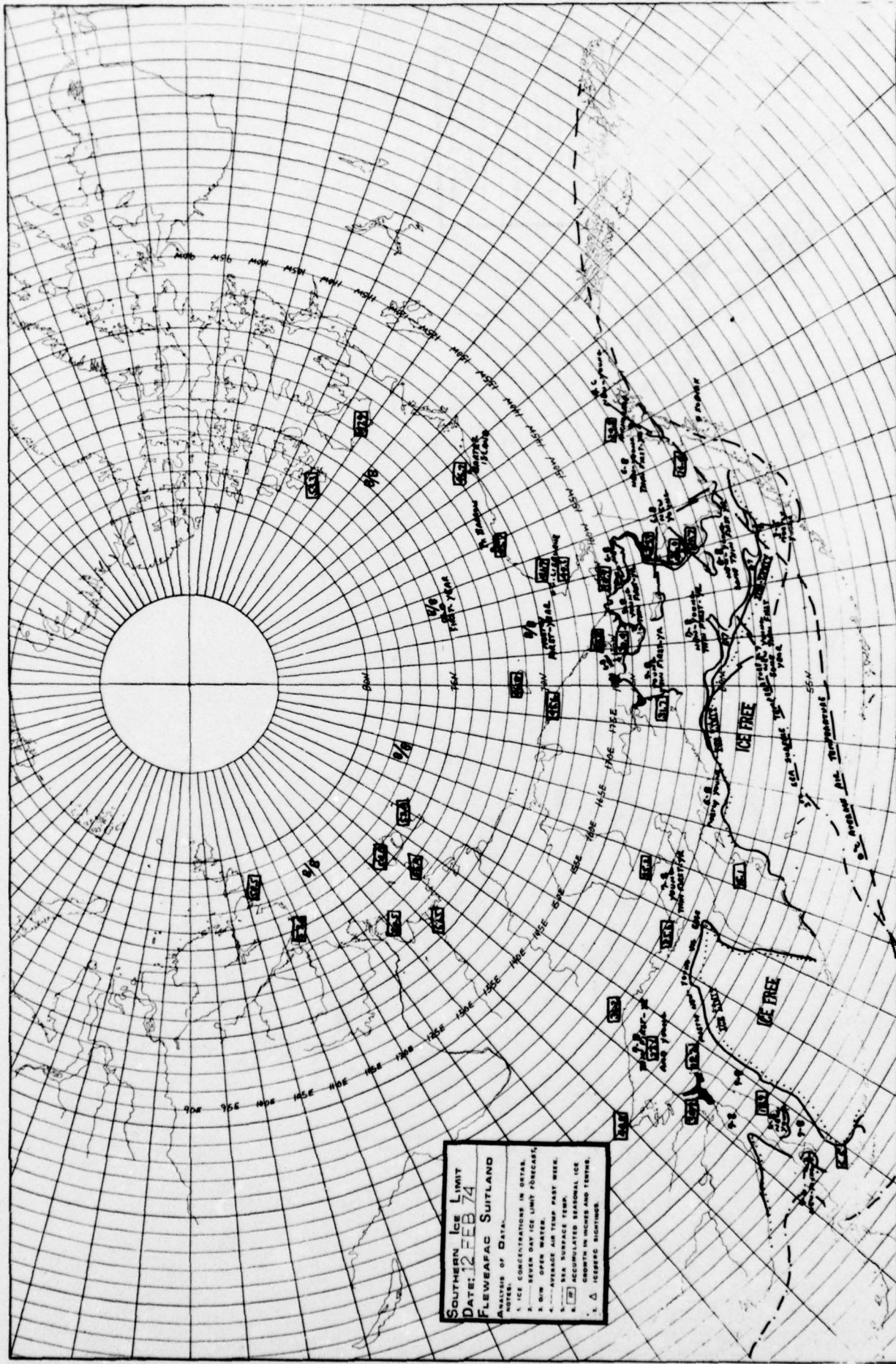








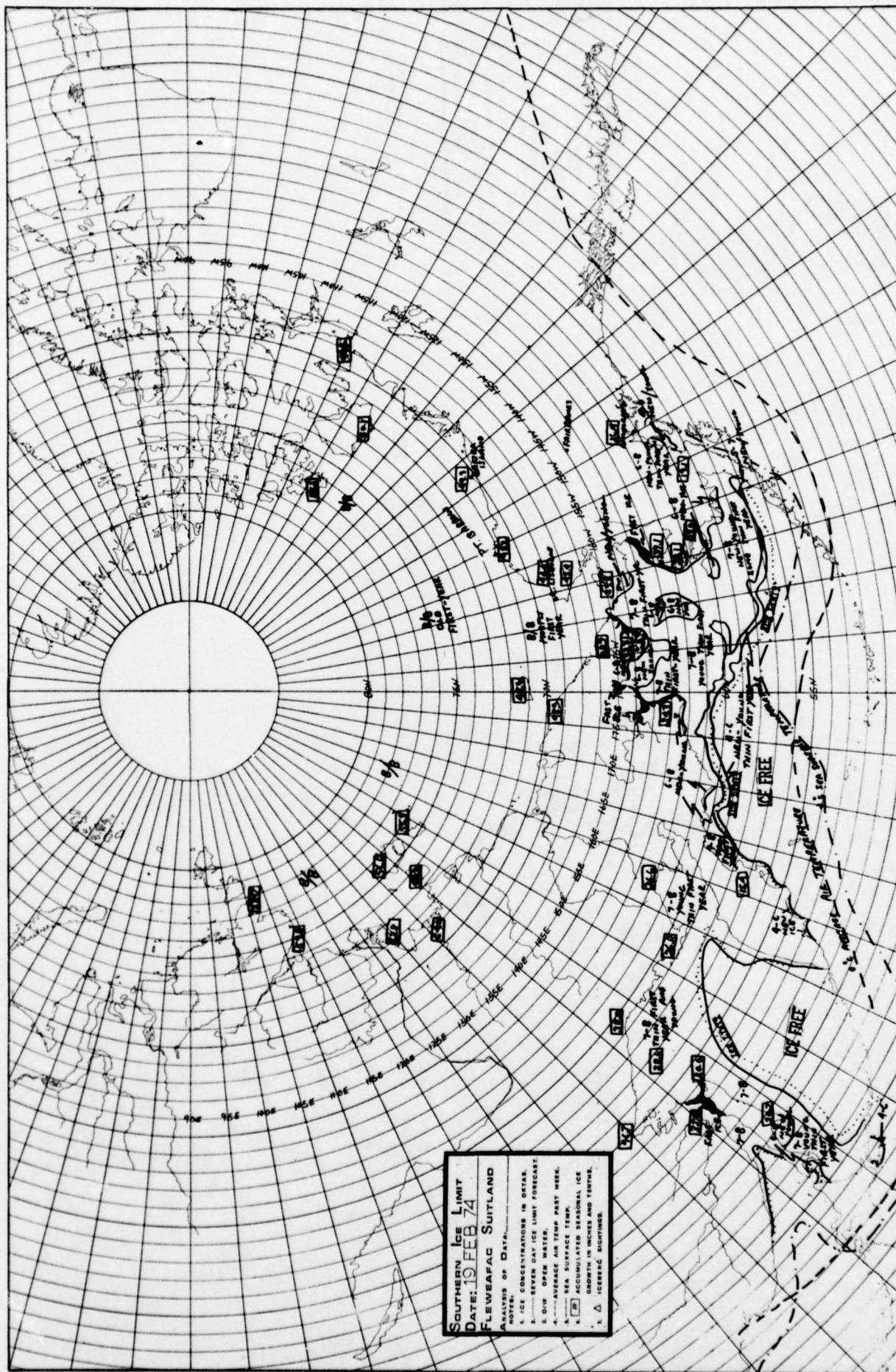


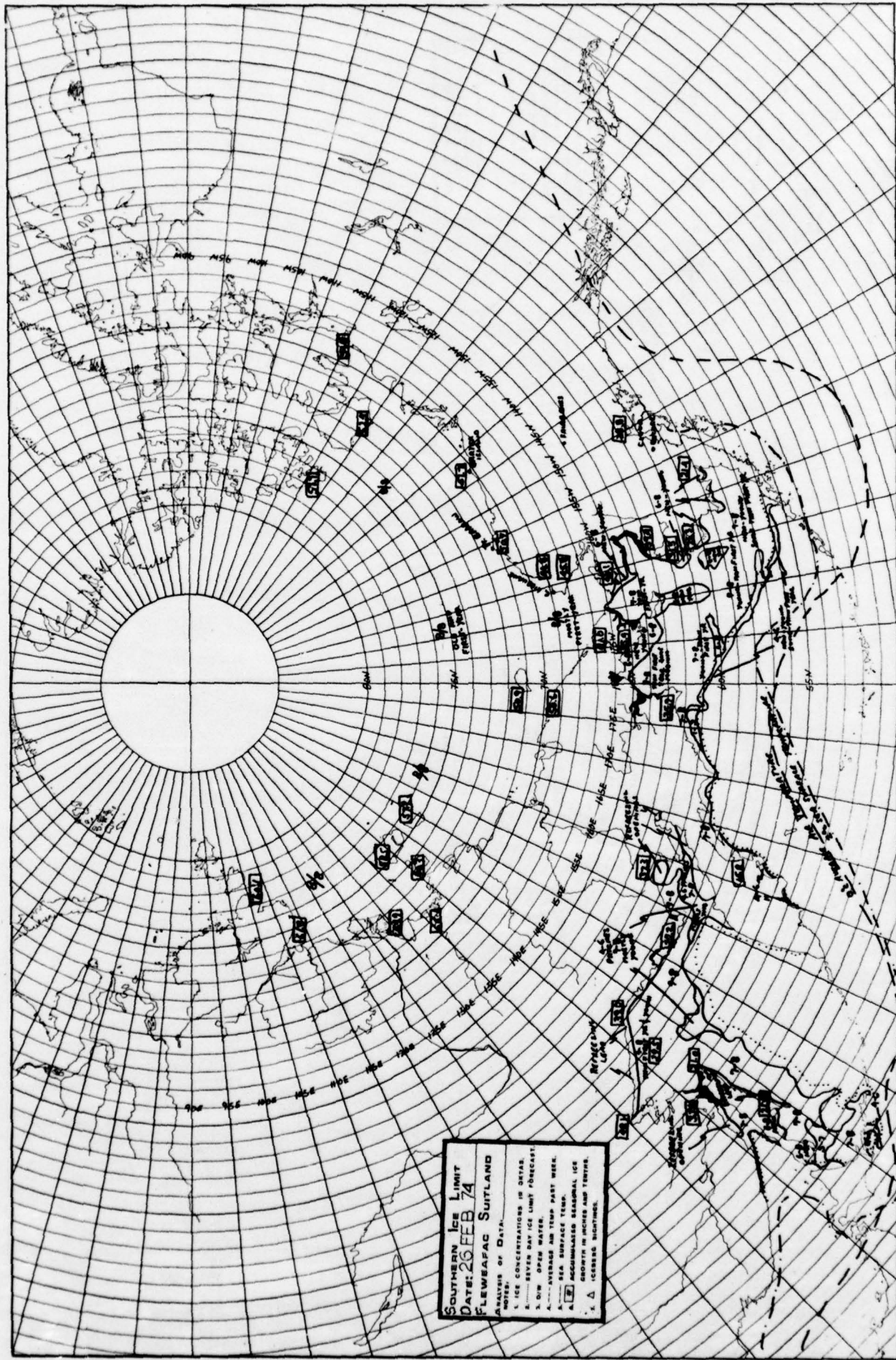


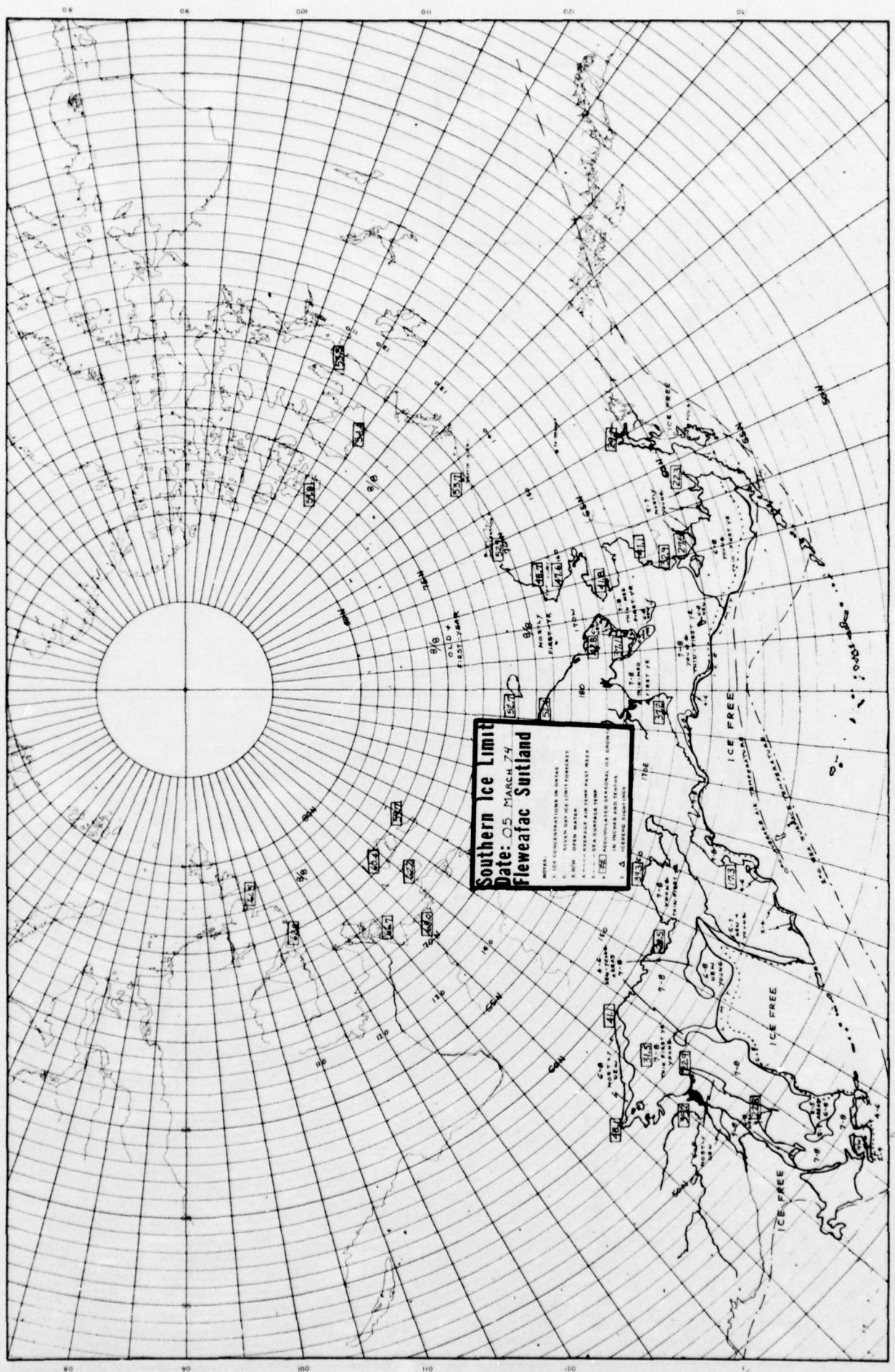
SOUTHERN ICE LIMIT
DATE: 12 FEB 74
FLEWEAFAC SUITLAND

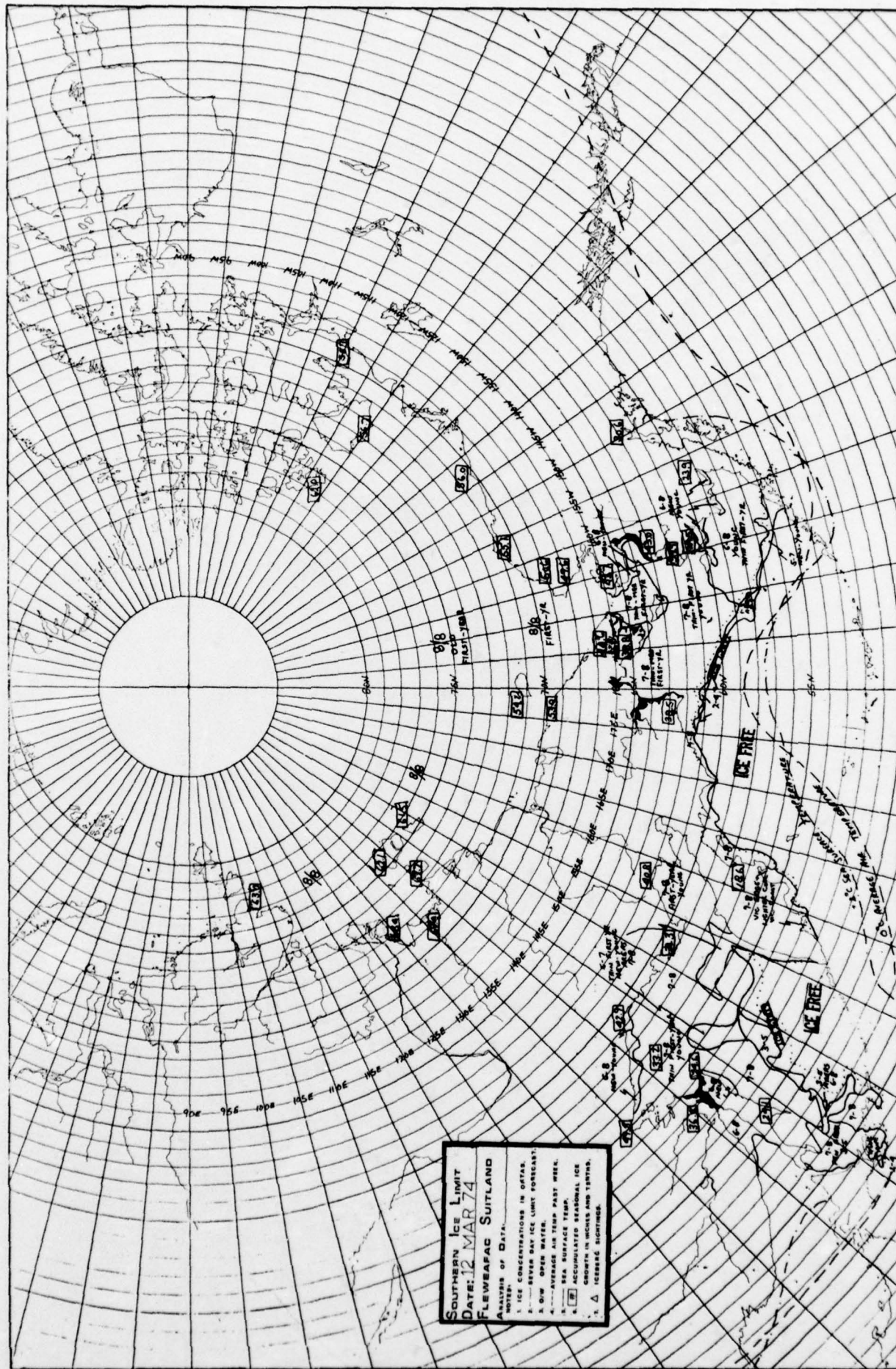
ANALYSIS OF DATA:

1. ICE CONCENTRATIONS IN OBTAIN.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. OPEN WATER.
 4. AVERAGE AIR TEMP.
 5. SEA SURFACE TEMP.
 6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
 7. ICEWAVE HEIGHTS.

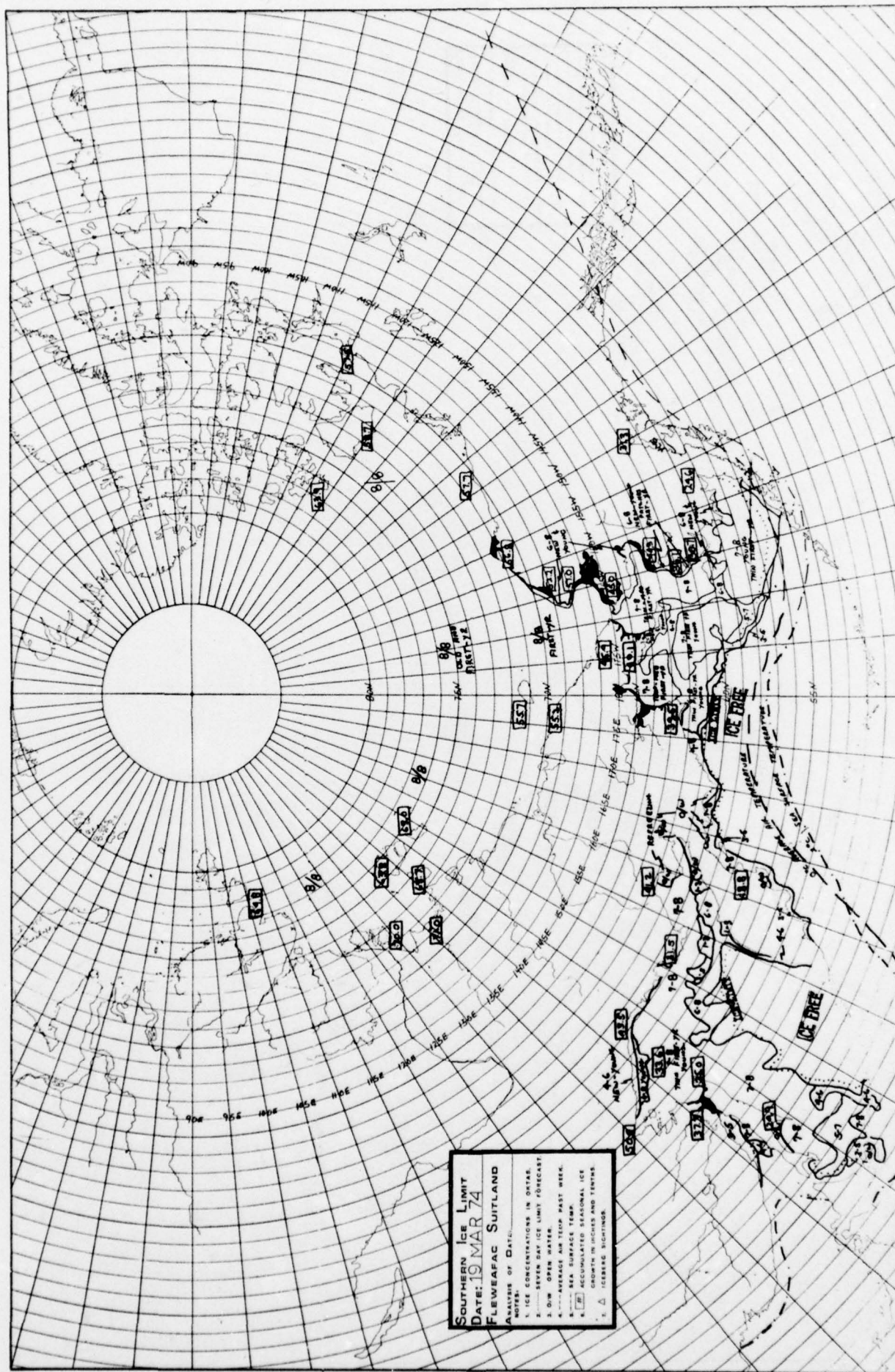


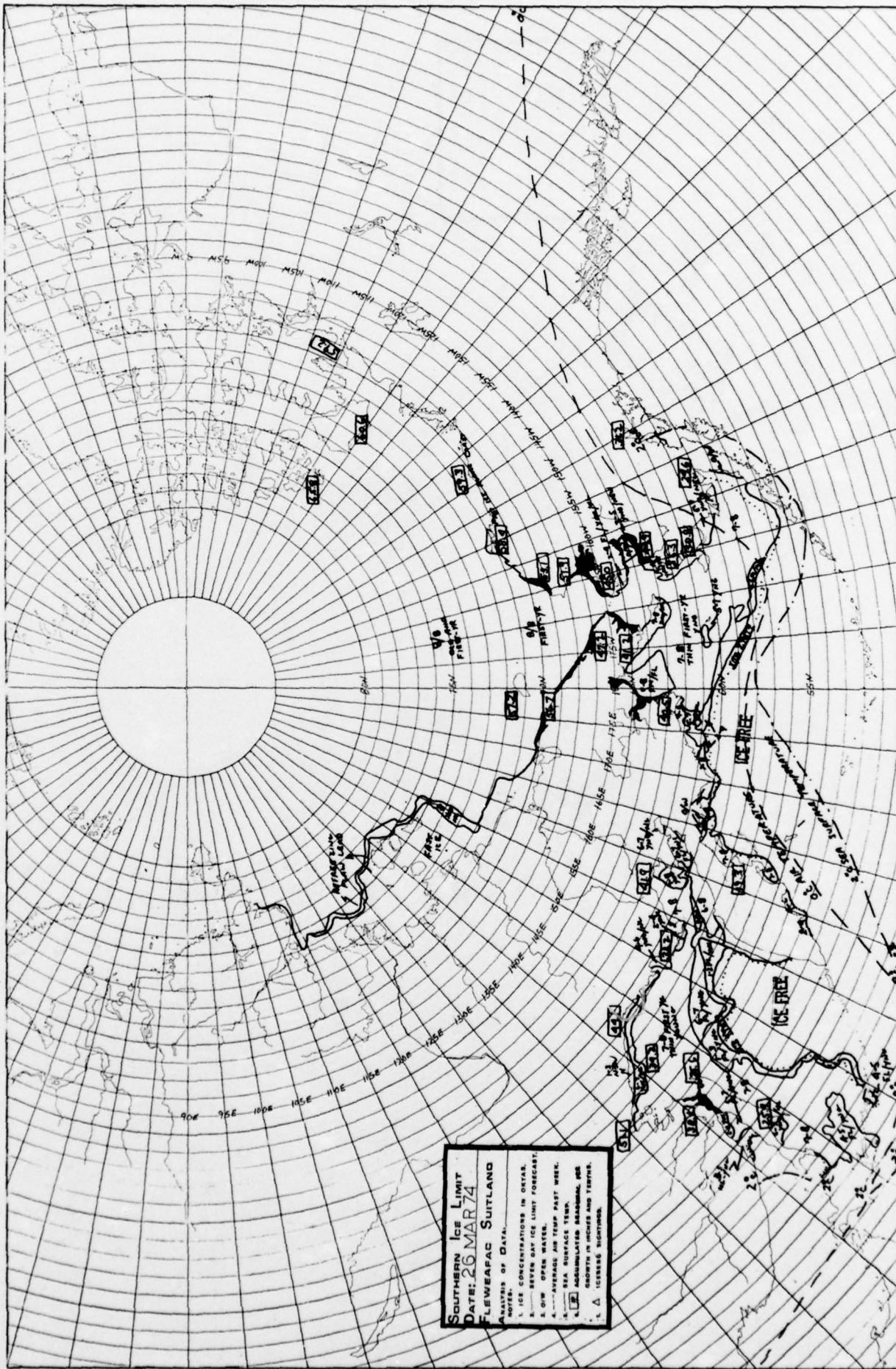


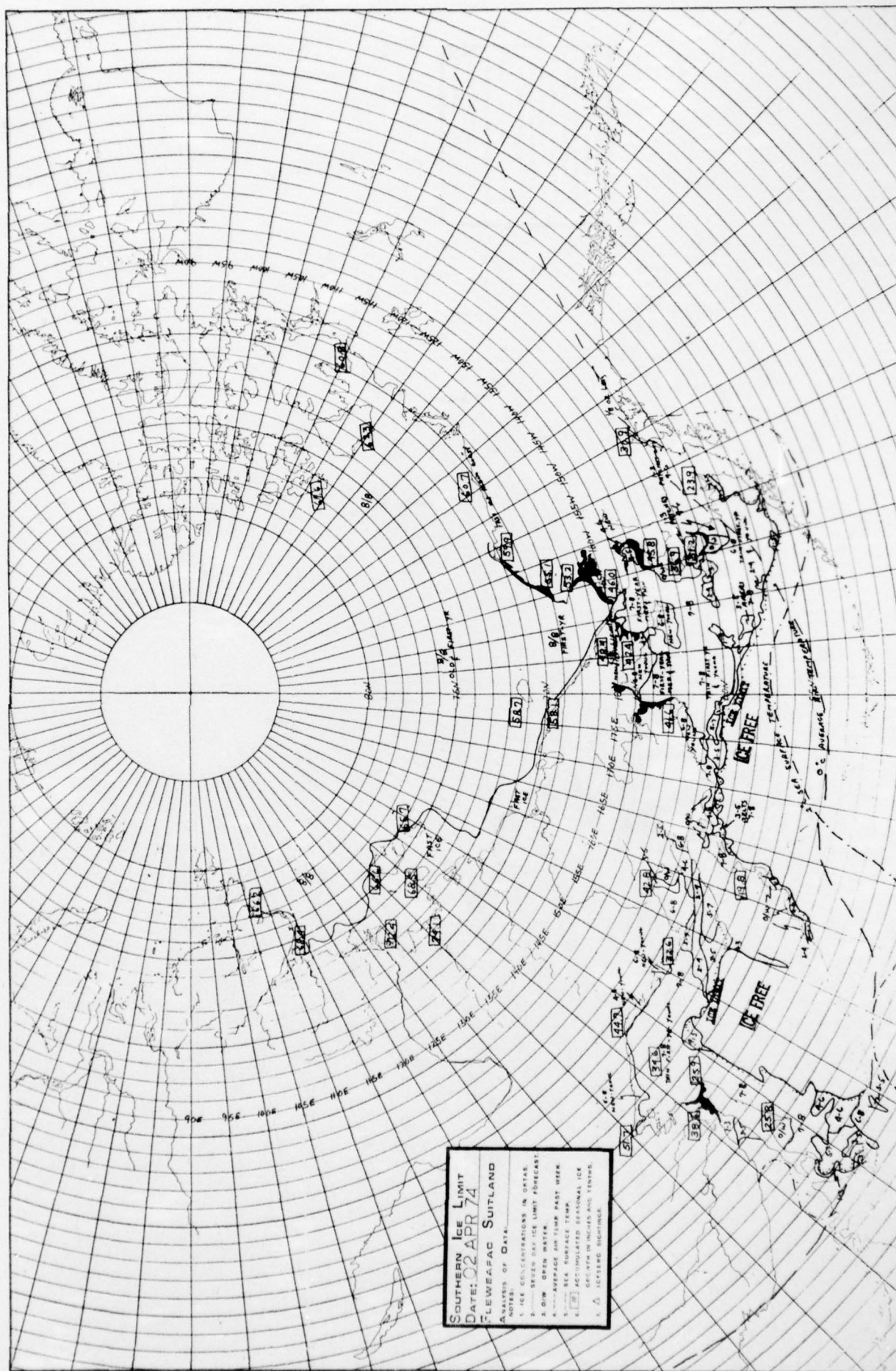


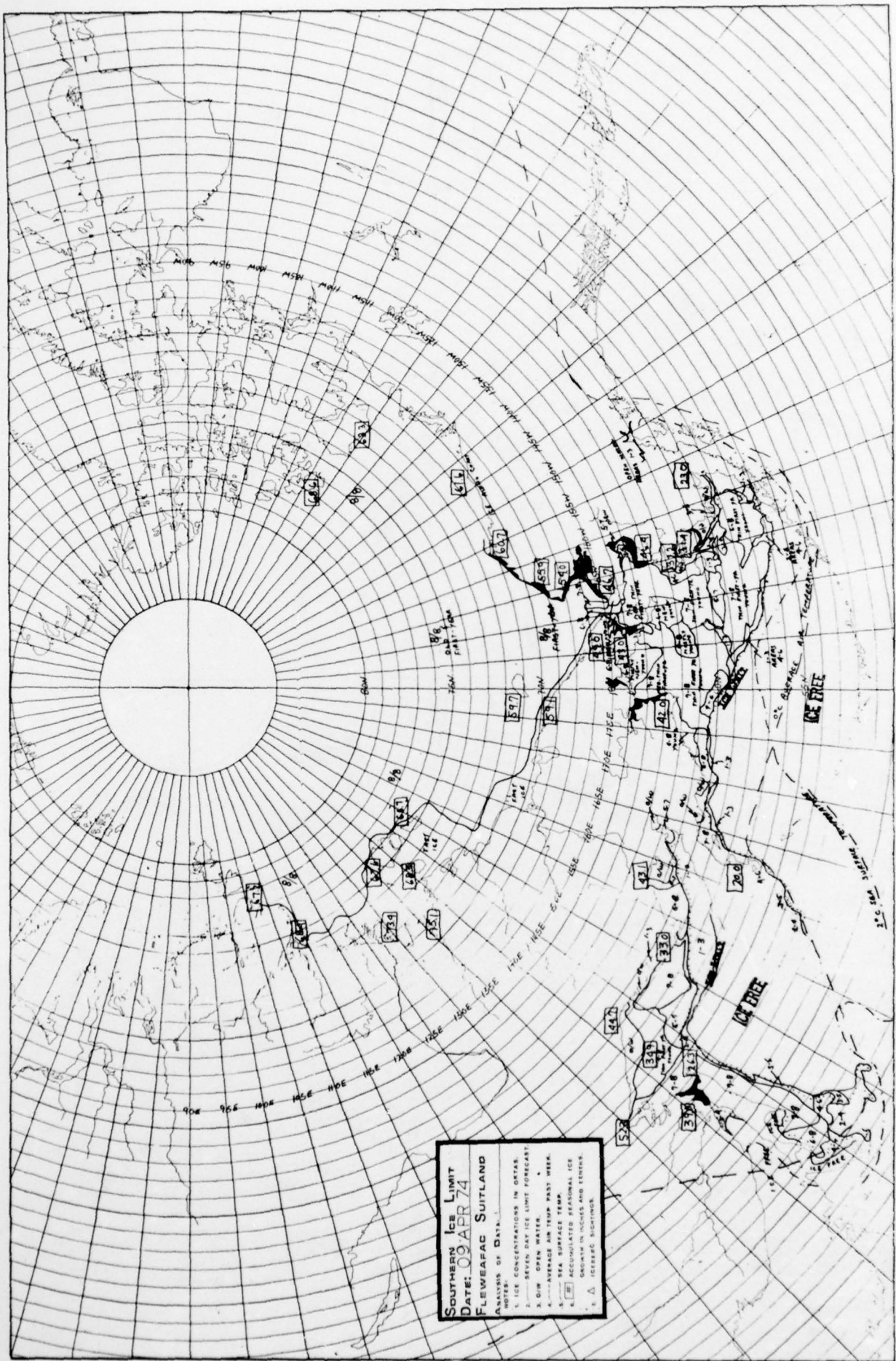


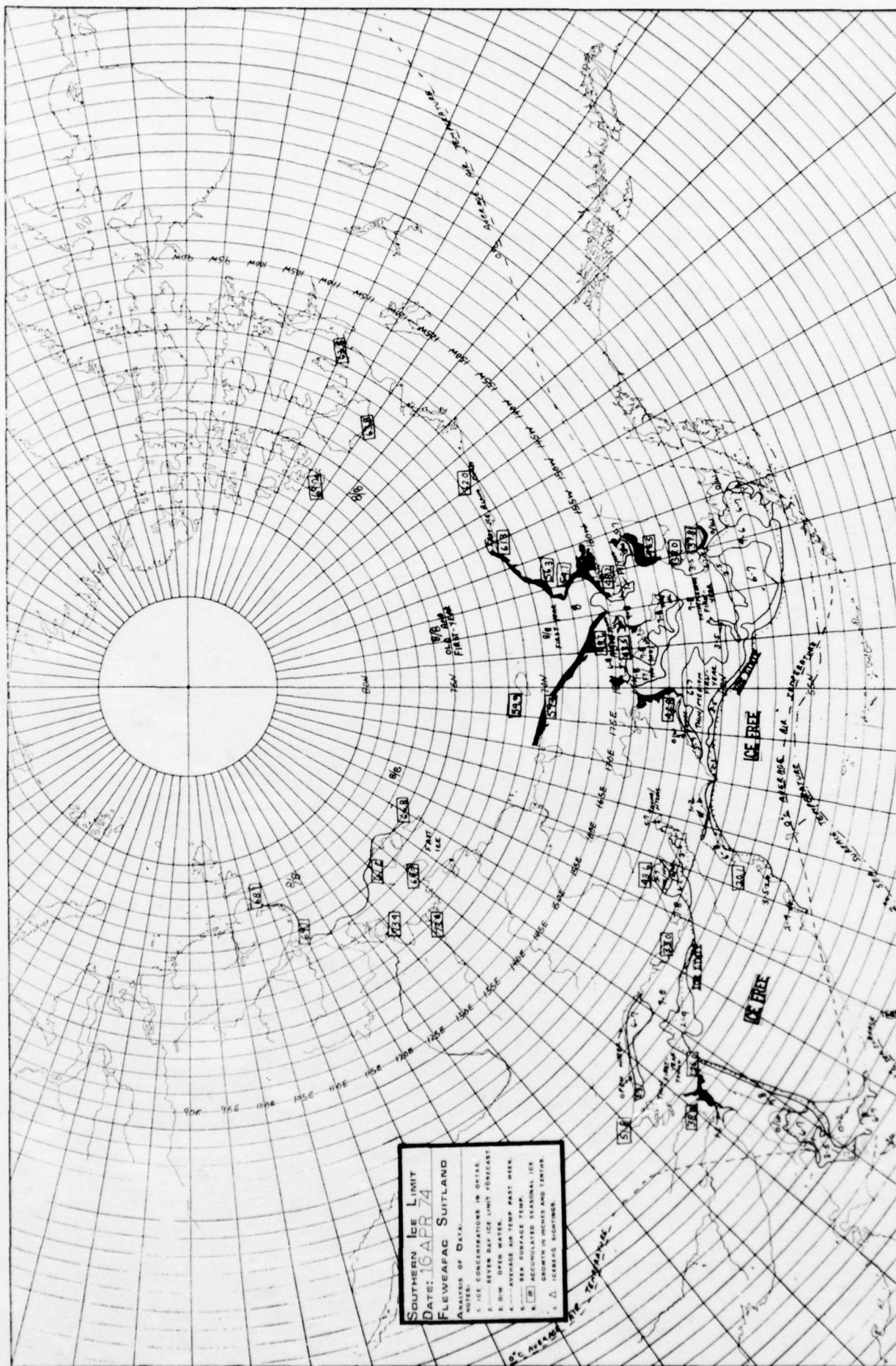
SOUTHERN ICE LIMIT
 DATE: 12 MAR 74
 FLEWELAC SUTLAND
 ANALYSIS OF DATA
 1. CONCENTRATIONS IN DATA
 2. 100% - 100% ICE LIMIT FORECAST
 3. 50% - 50% ICE LIMIT FORECAST
 4. AVERAGE ANNUAL DATA HERE
 5. SEA SURFACE TEMP
 6. ACCUMULATED SEASONAL ICE
 7. GROWTH IN MILES AND 100YRS
 8. ICEBERG SIGHTINGS

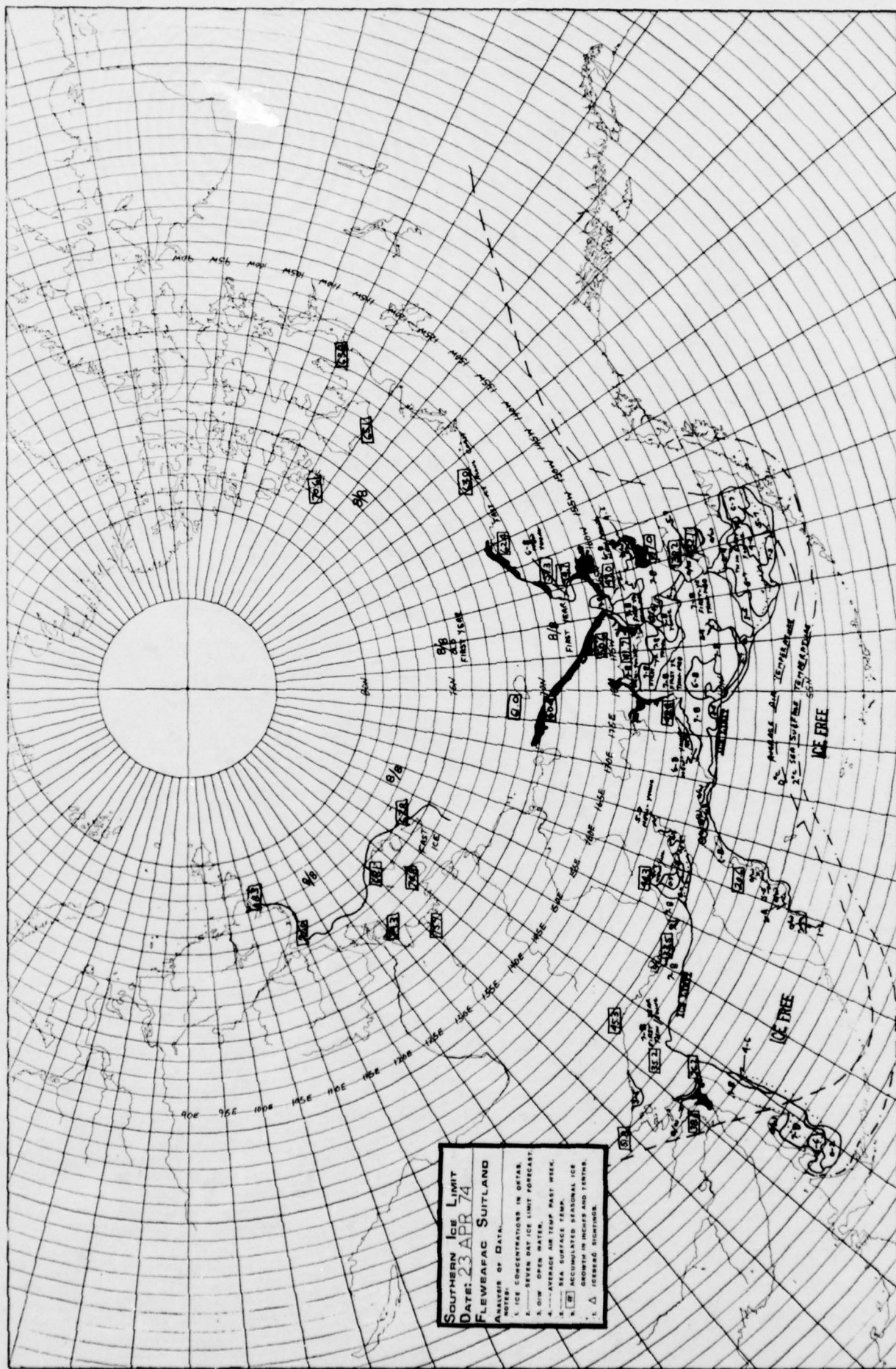


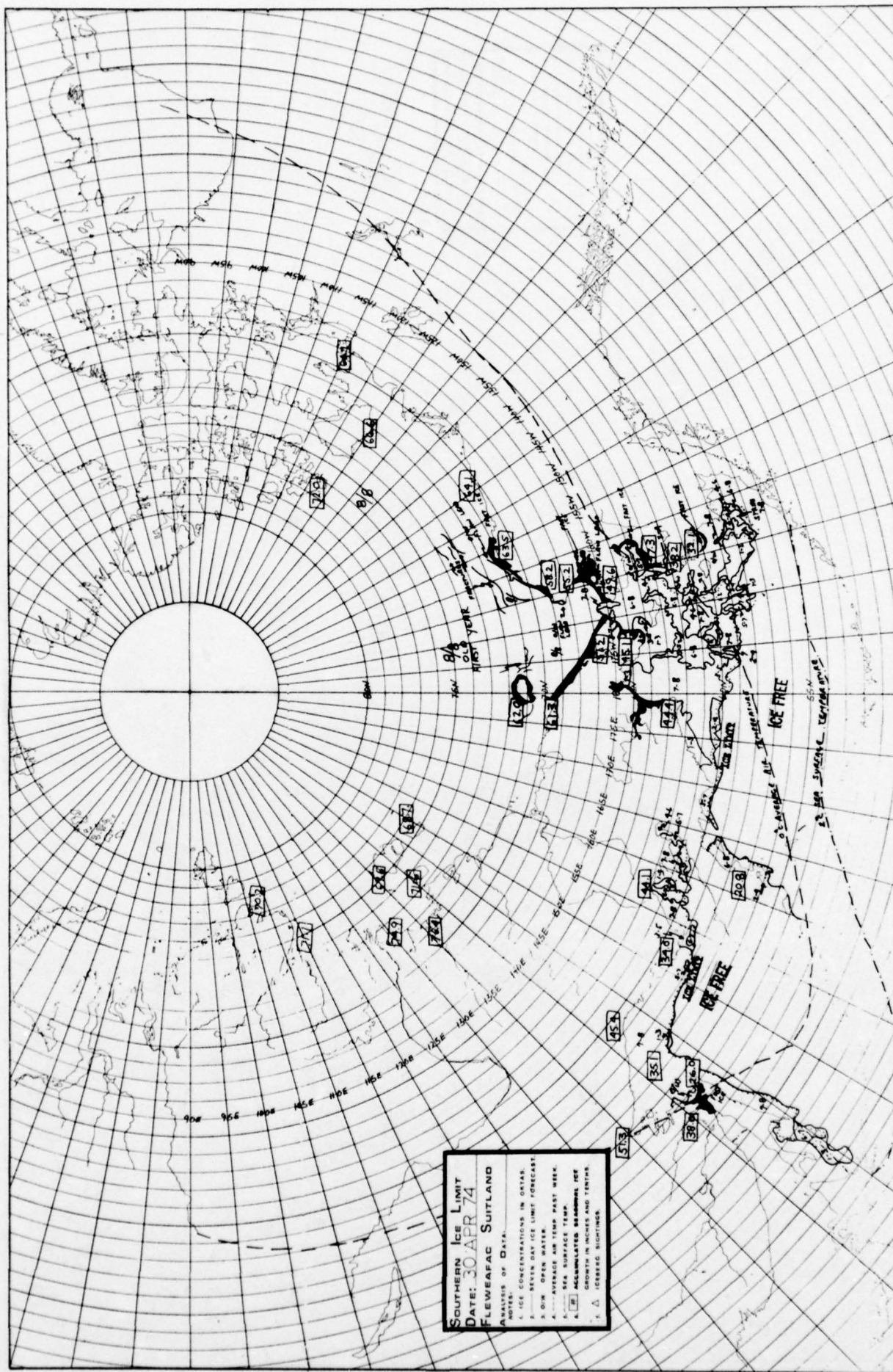


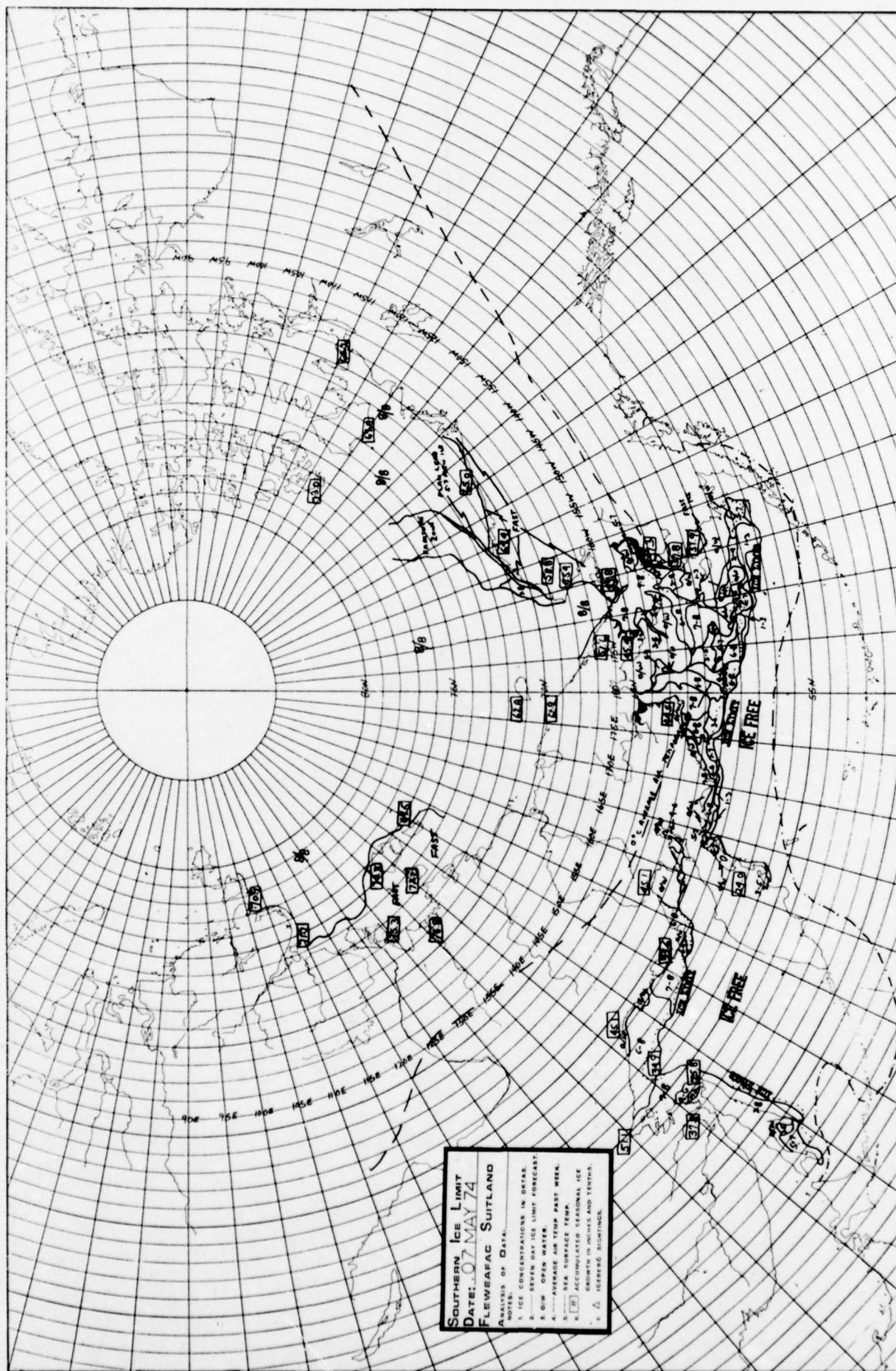


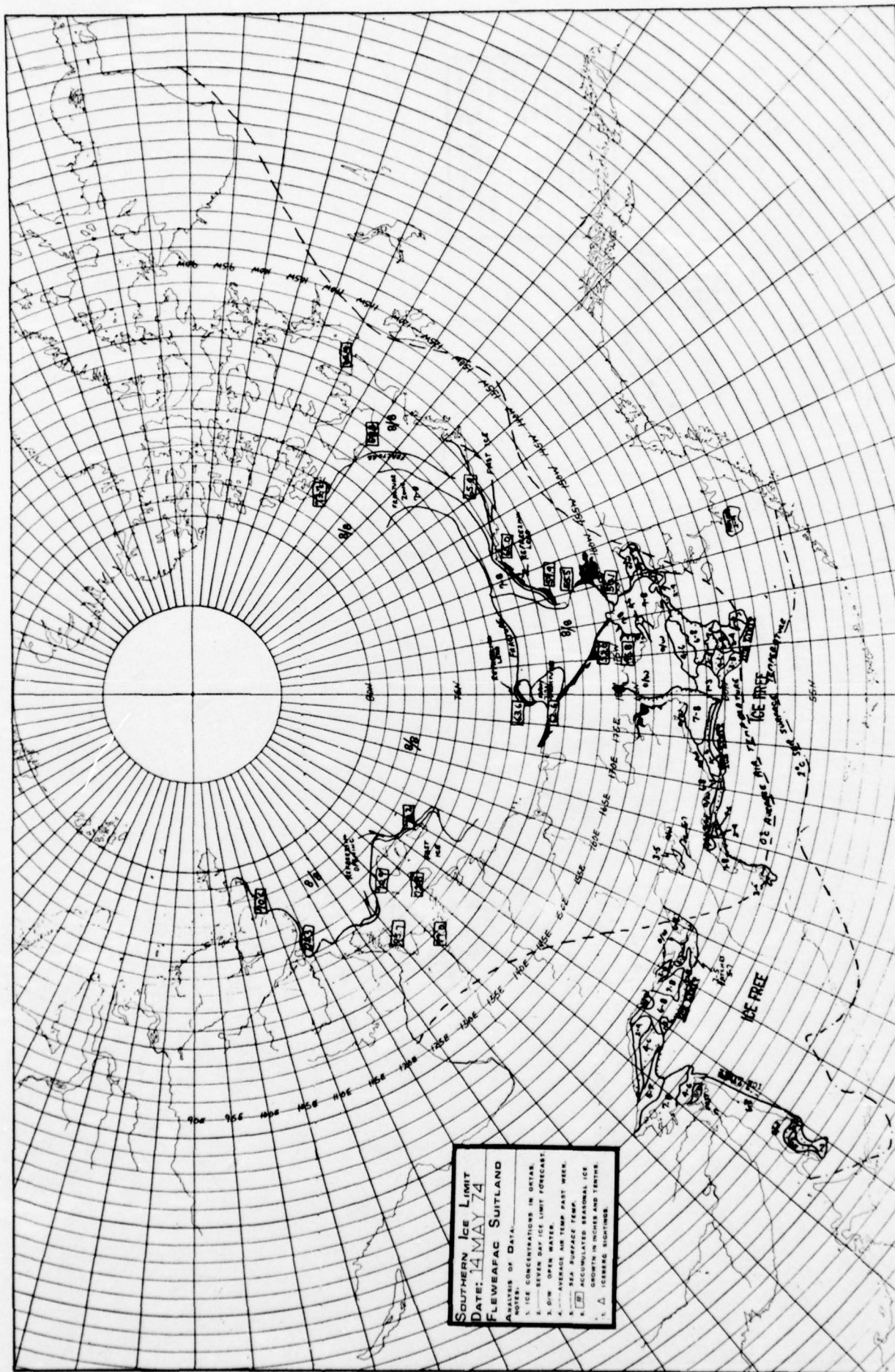


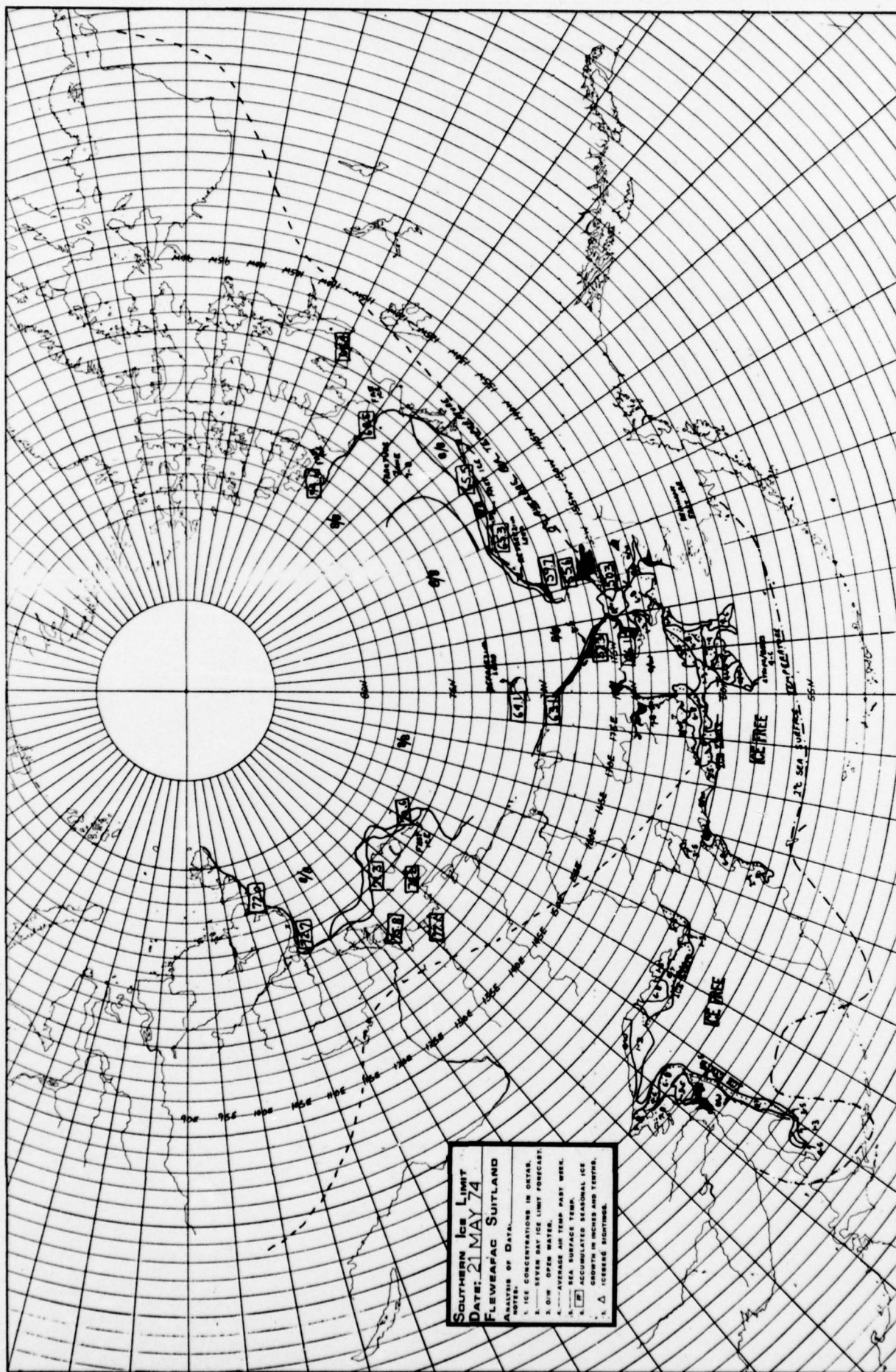


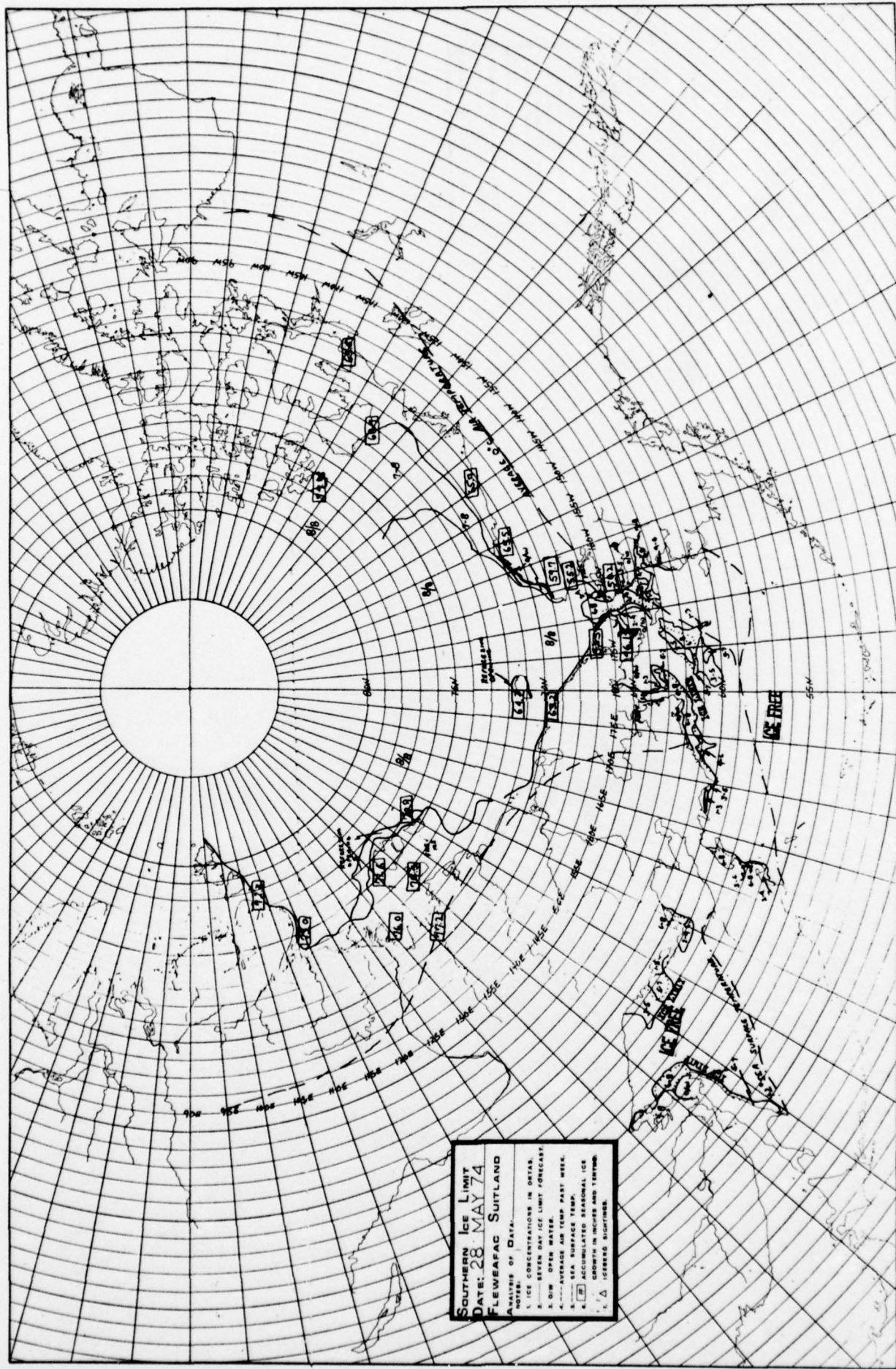


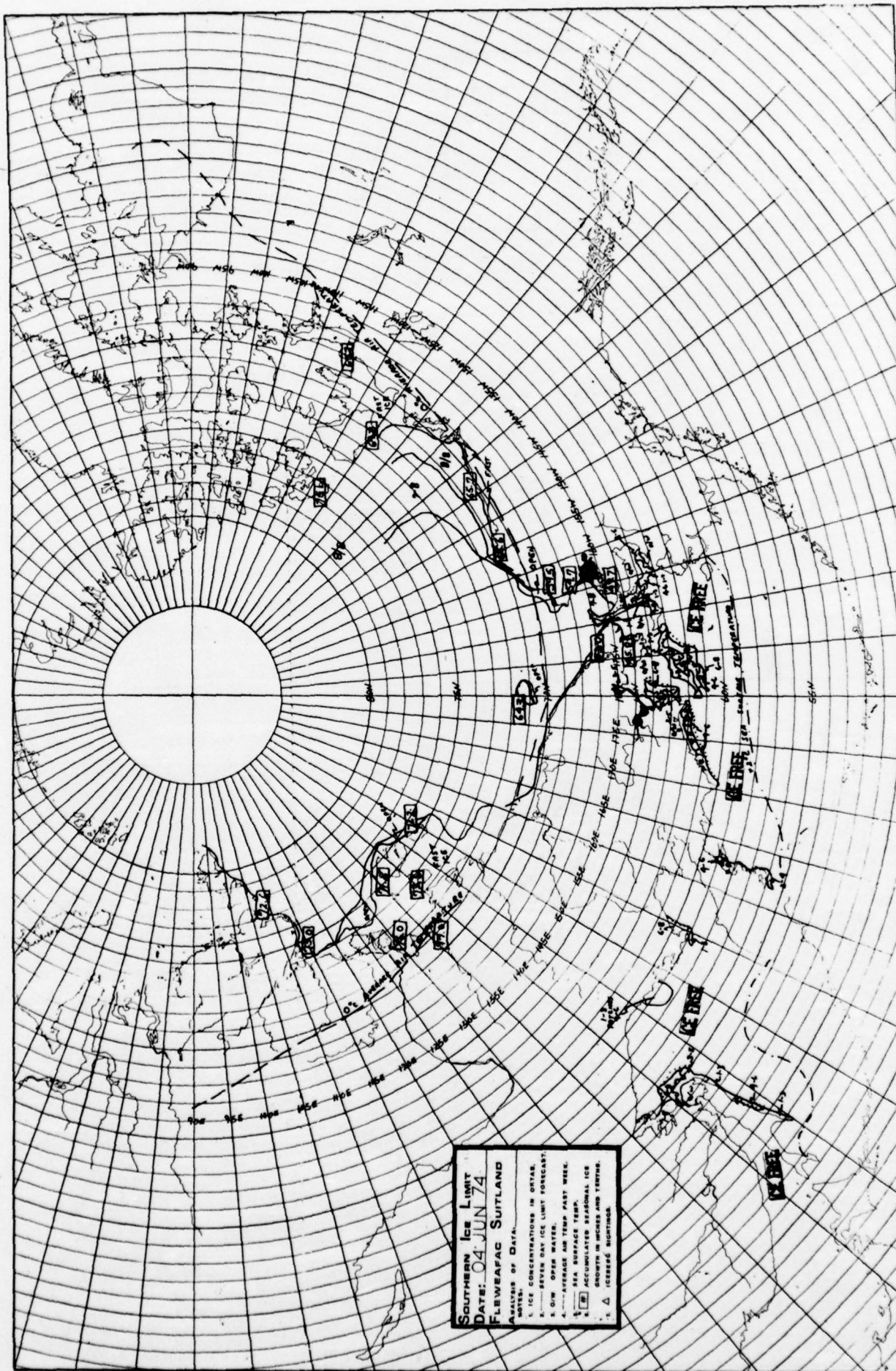


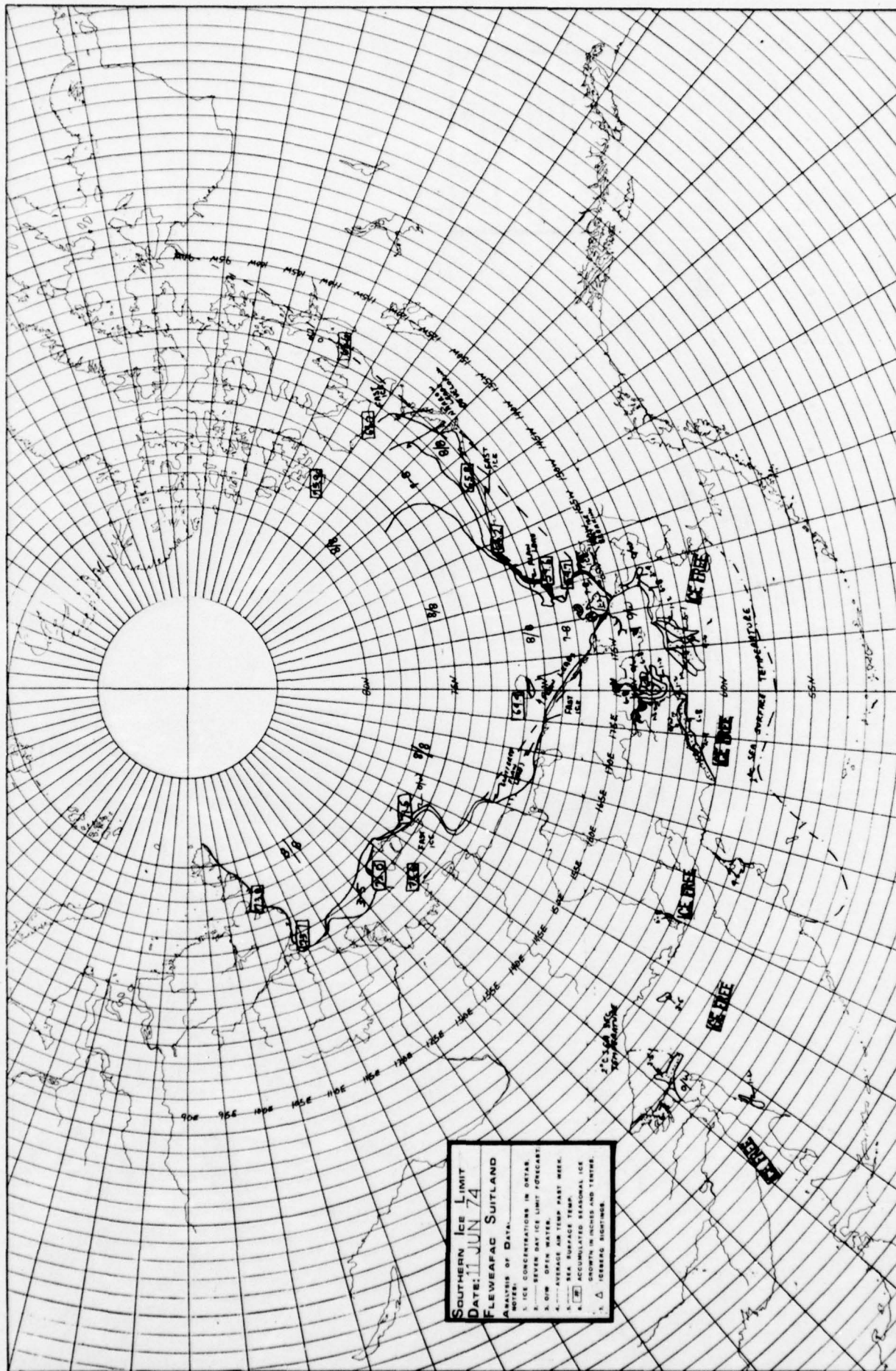


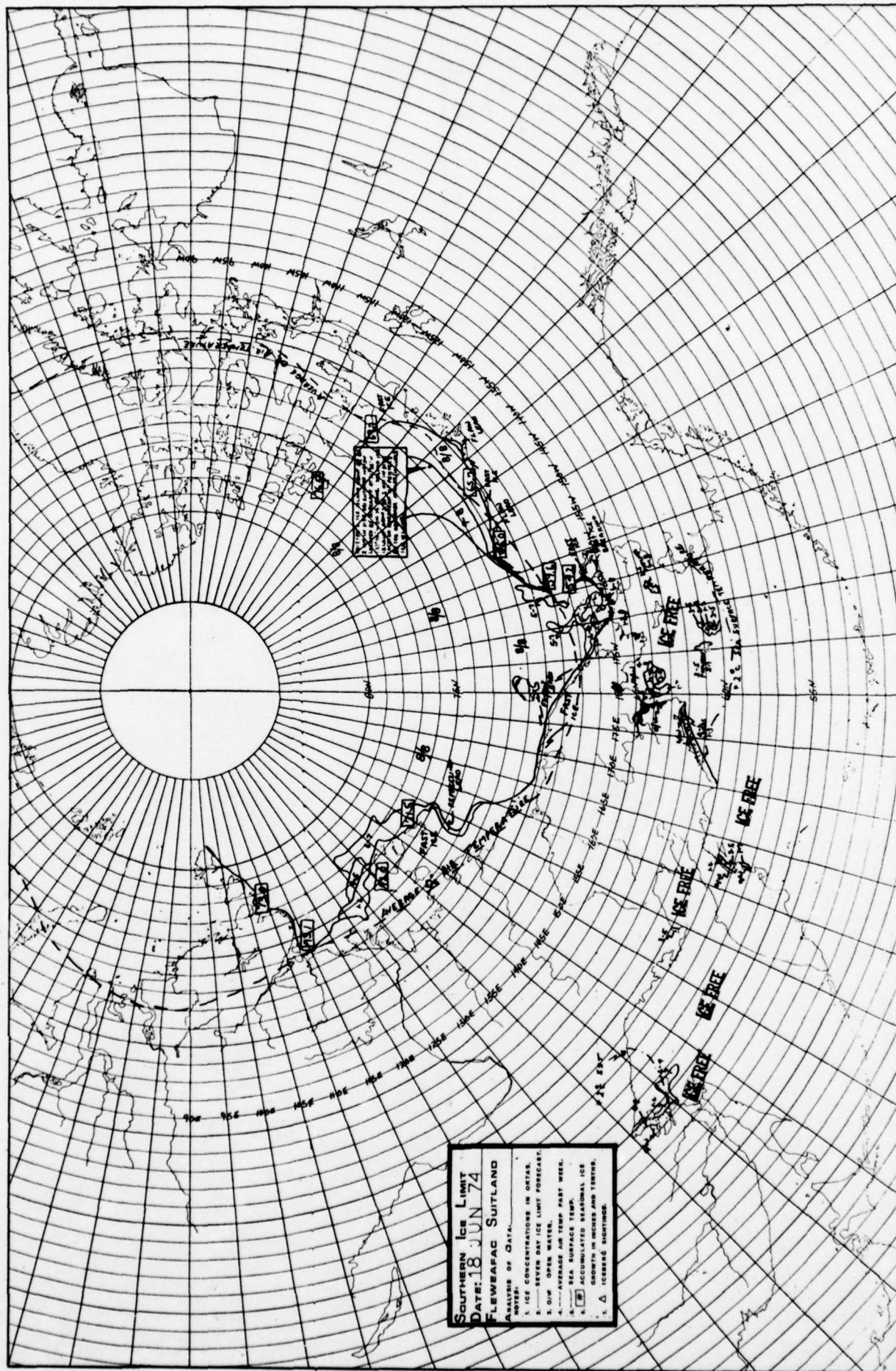








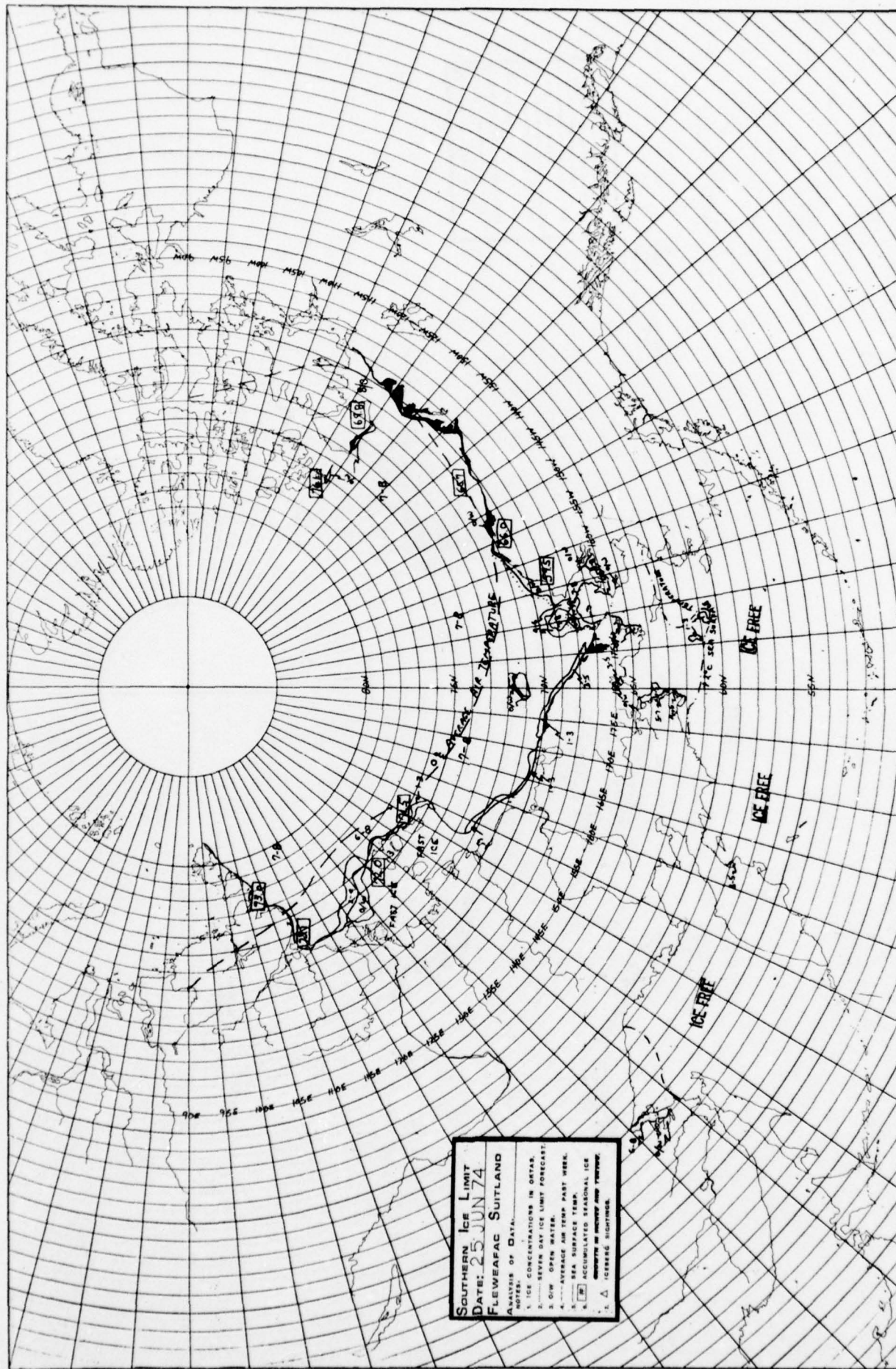


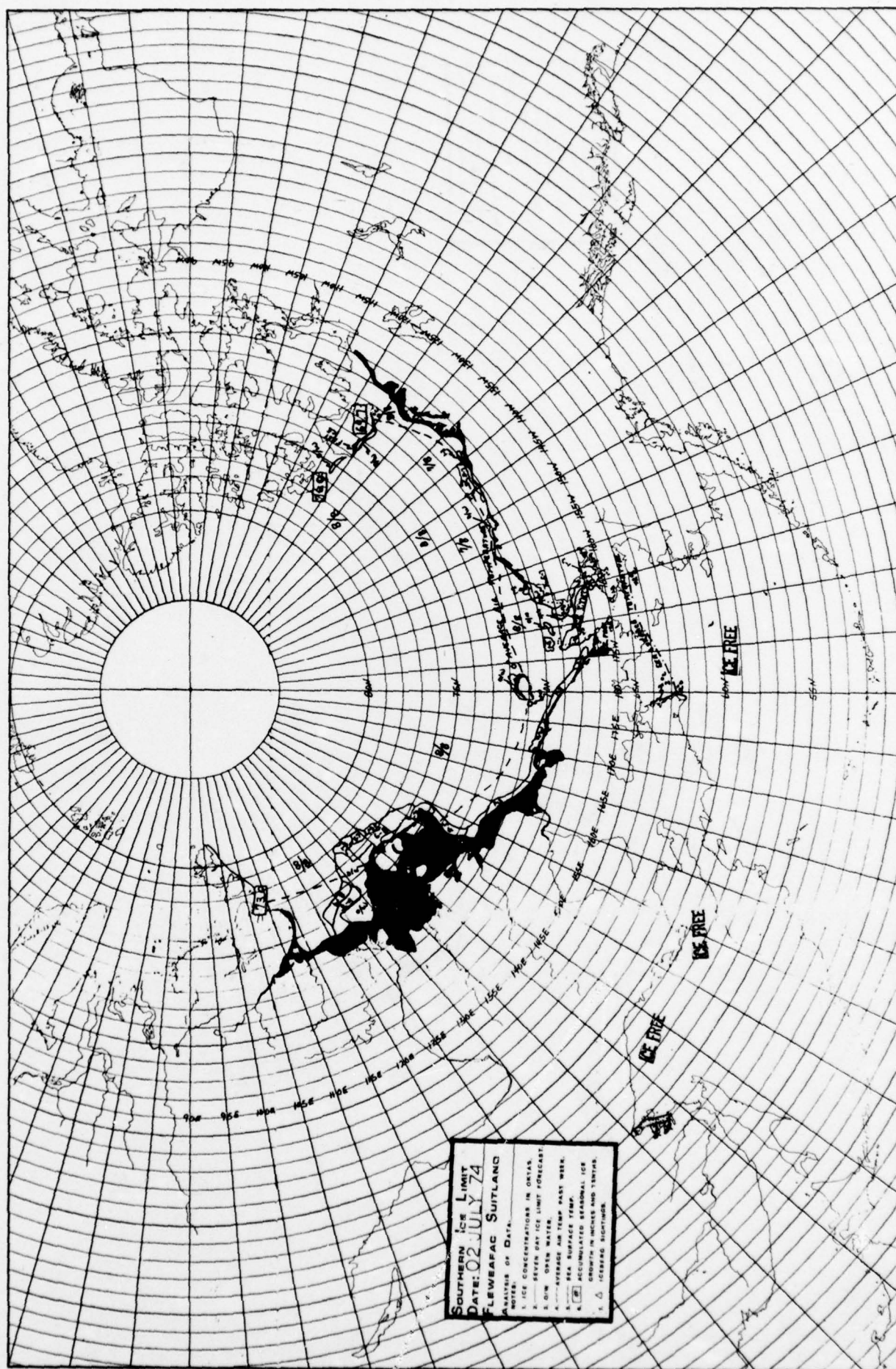


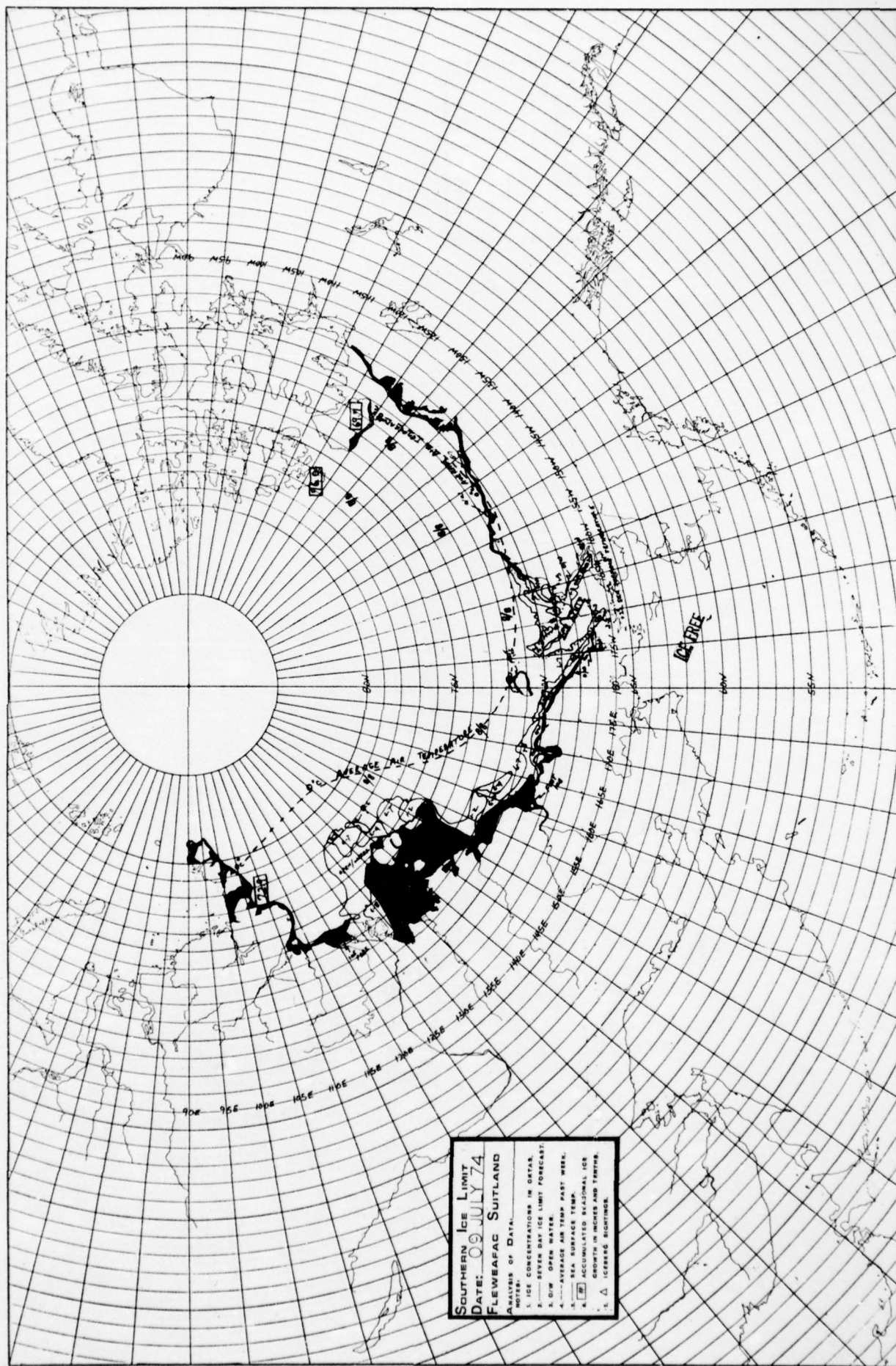
SOUTHERN ICE LIMIT
DATE: 18 JUN 74
FLEWAPAC SUITLAND

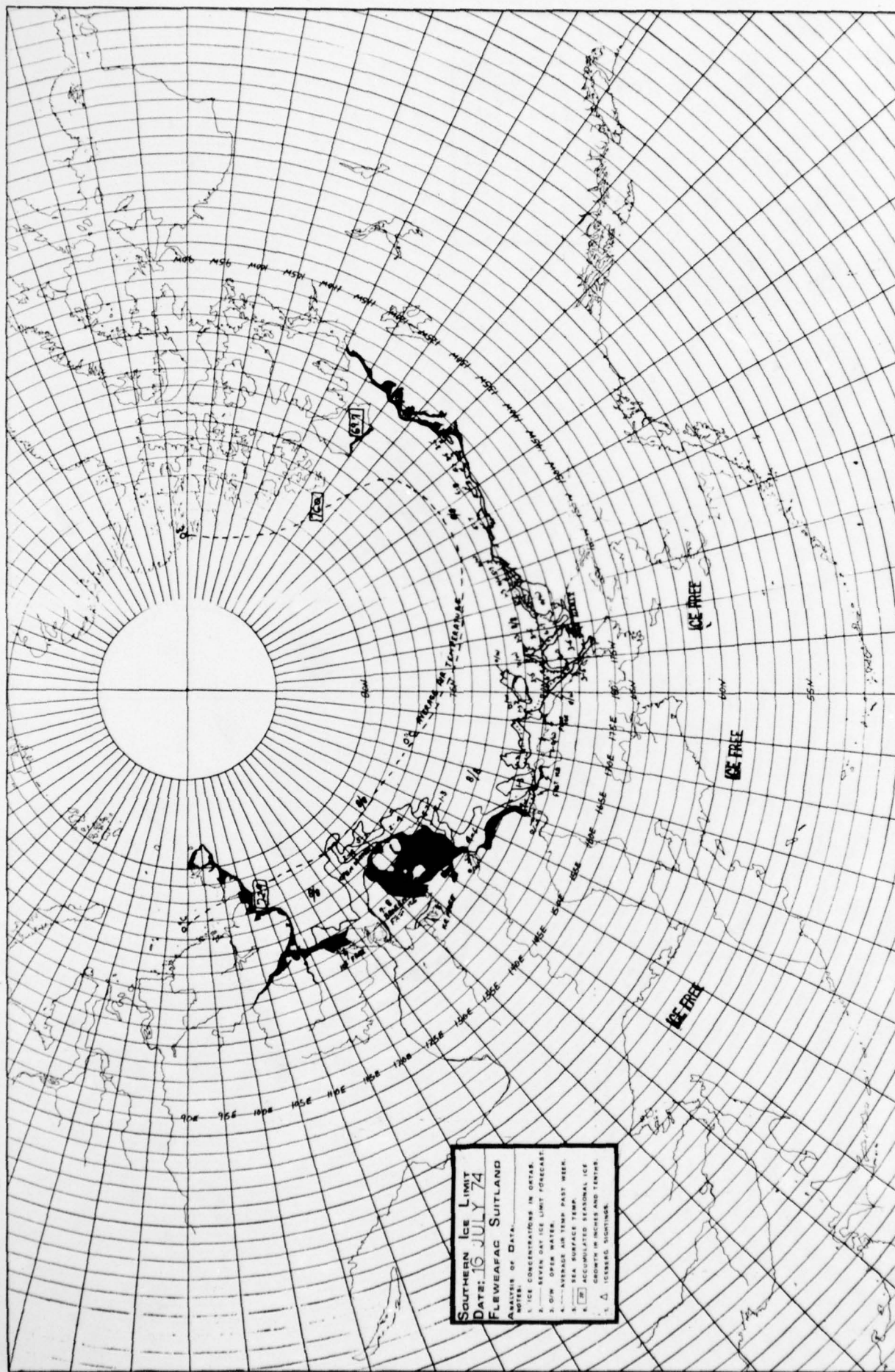
ANALYSIS OF DATA.

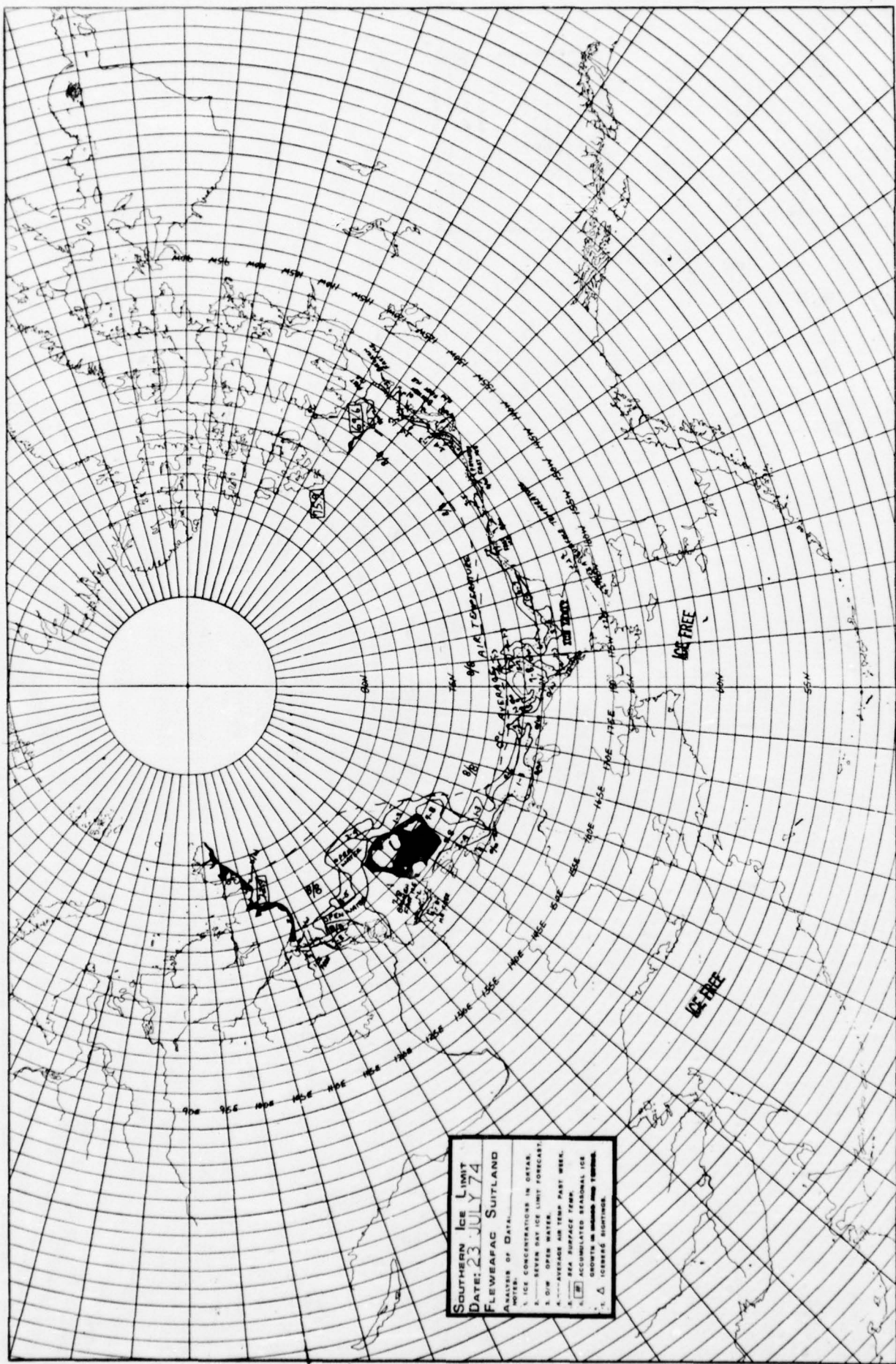
1. ICE CONCENTRATIONS IN QATAR.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. QWP OPEN WATER.
 4. AVERAGE AIR TEMP PAST WEEK.
 5. SEA SURFACE TEMP.
 6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
 7. Δ ICEBERG SIGHTINGS.





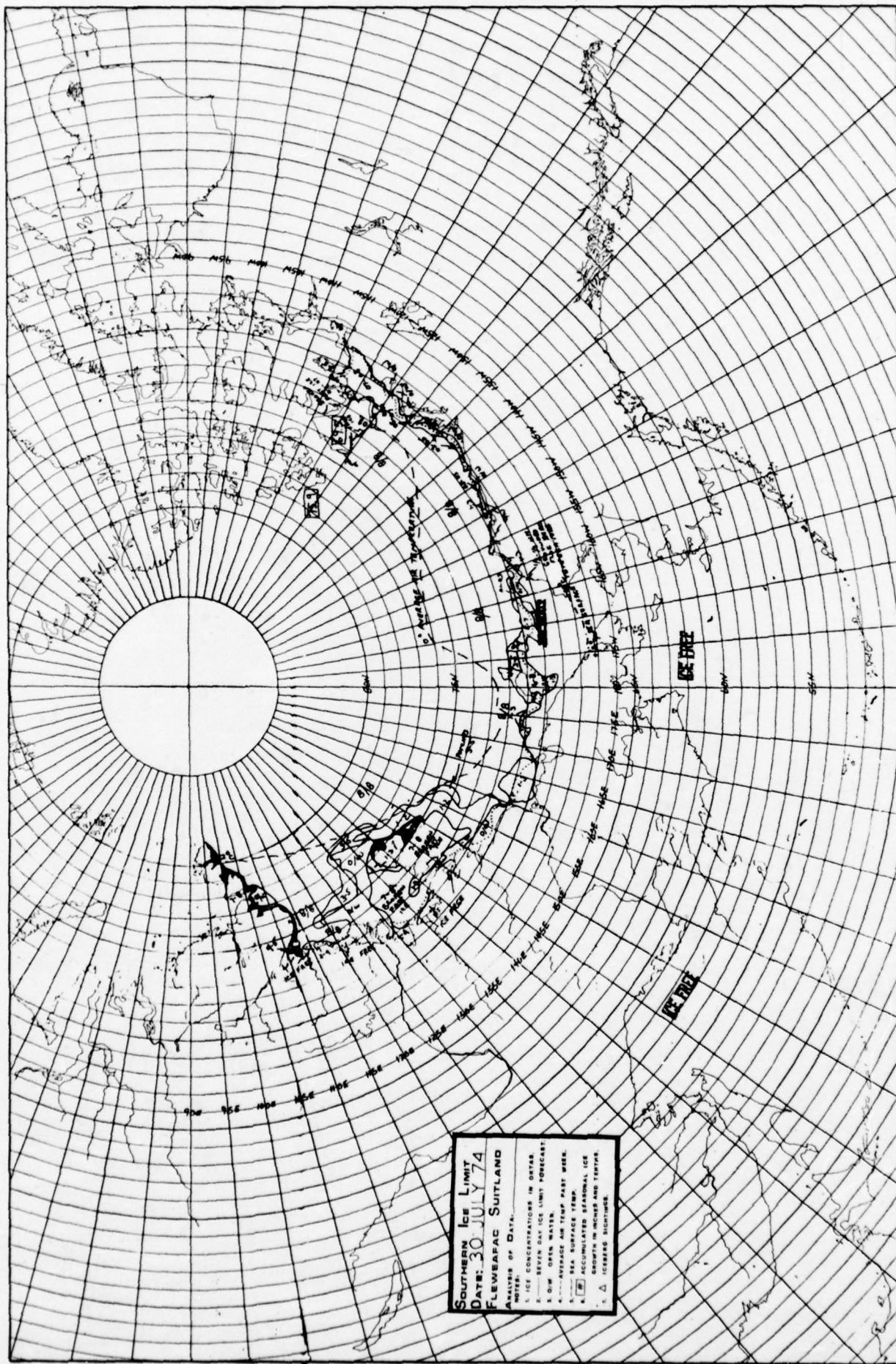


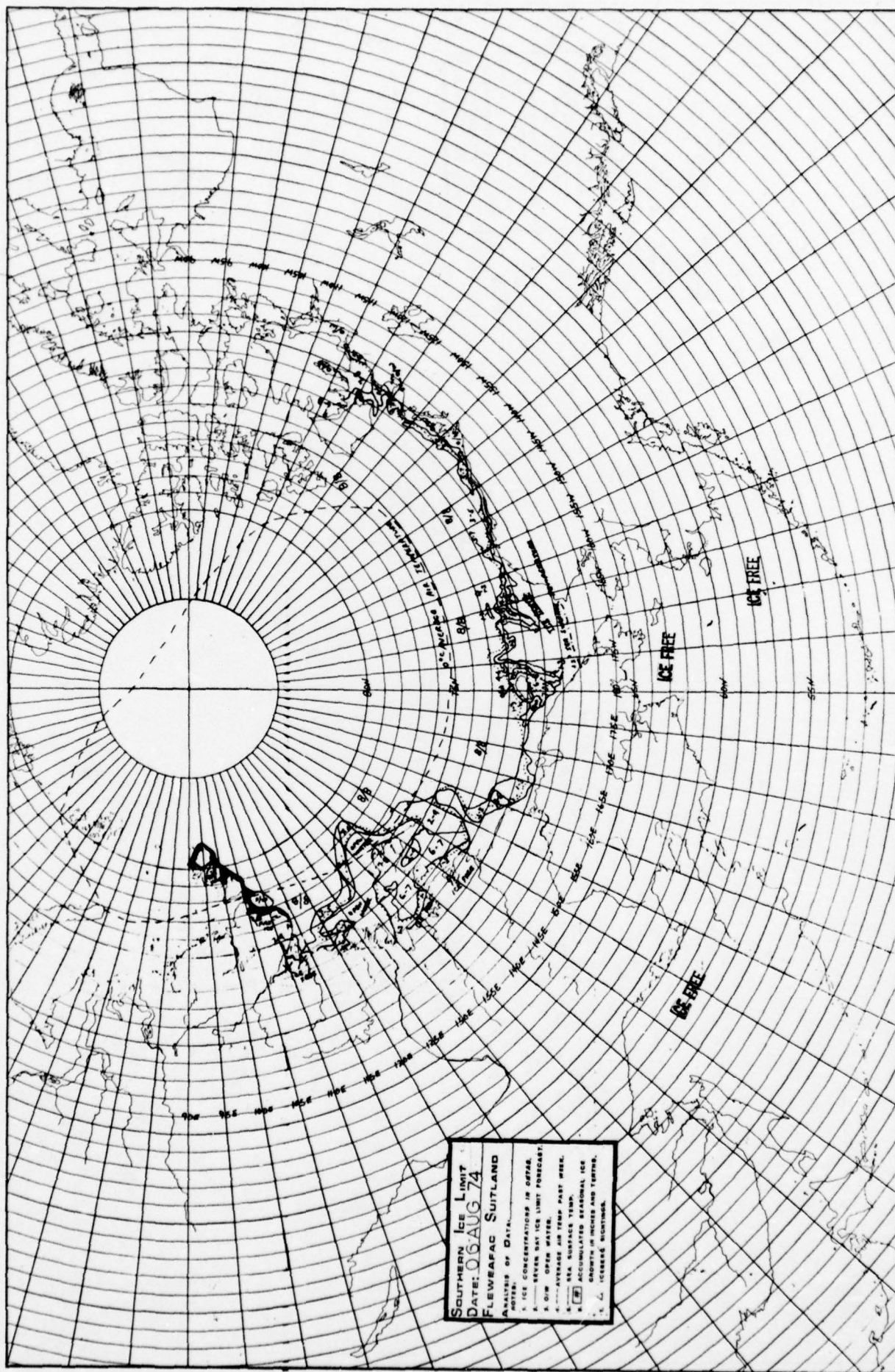


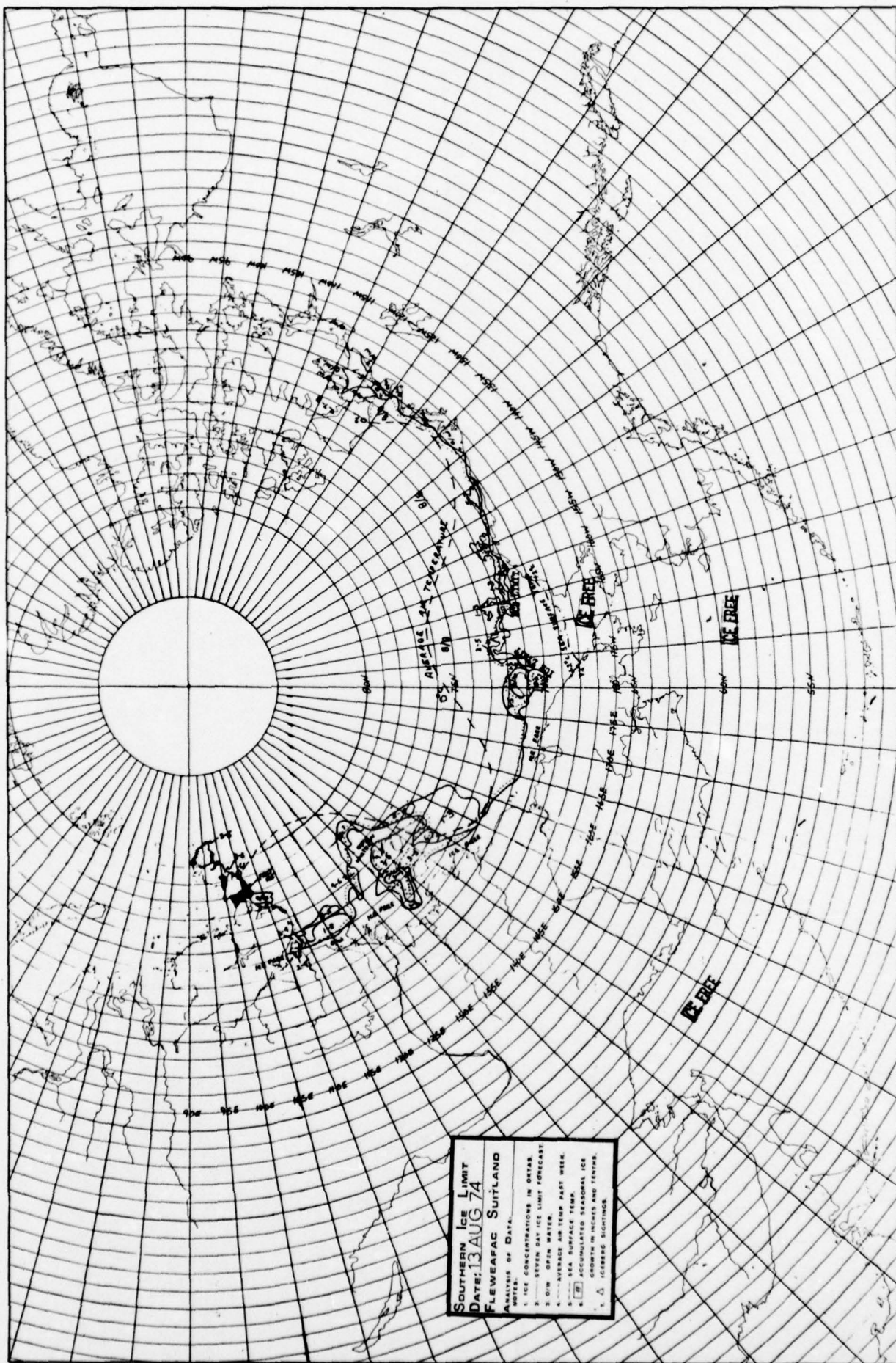


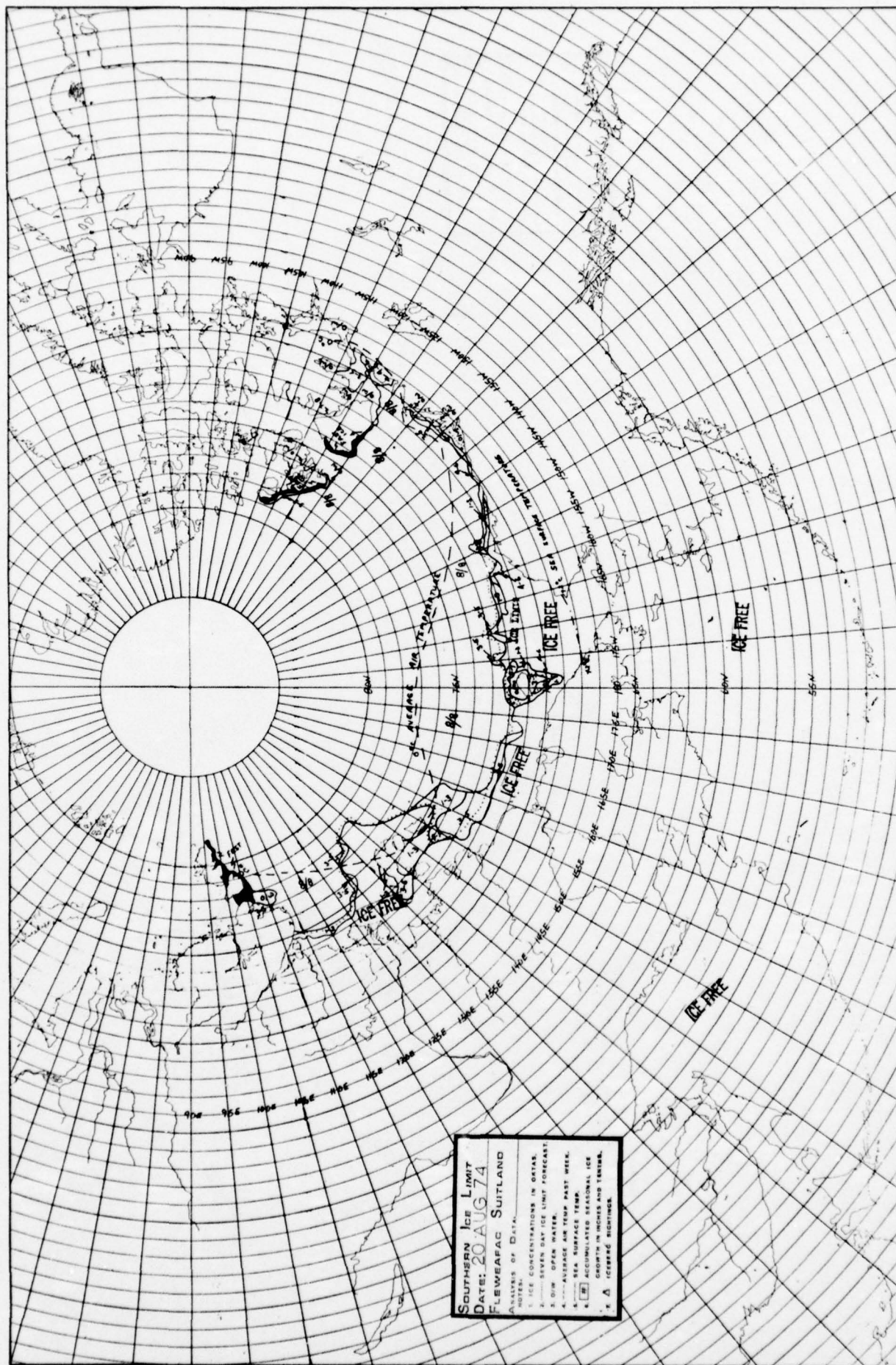
SOUTHERN ICE LIMIT
DATE: 23 JULY 74
FLEWELAPAC SUTLAND

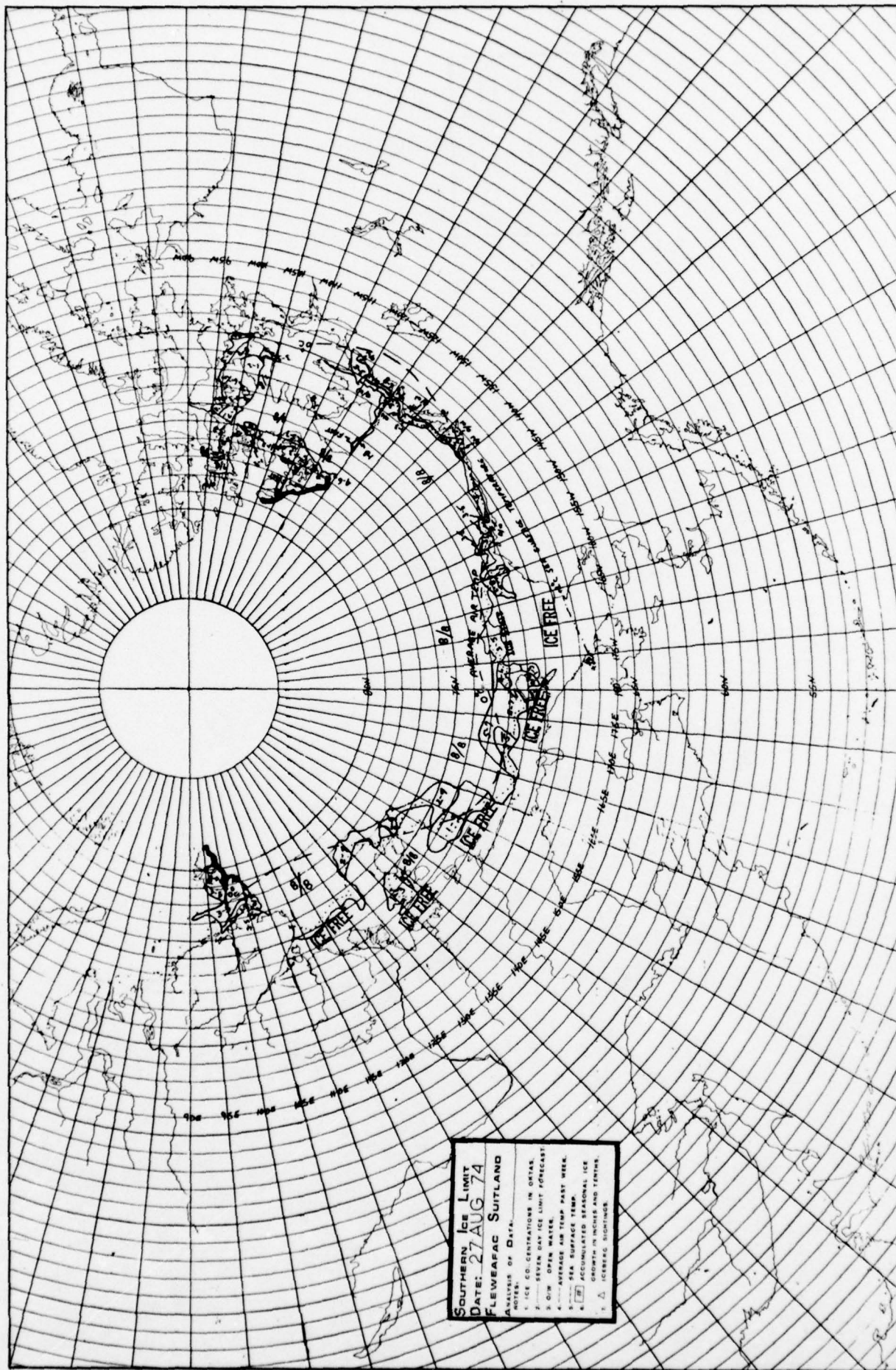
LEGEND OF DATA:
1. ICE CONCENTRATIONS IN OYAN
2. SEVEN DAY ICE LIMIT FORECAST
3. DOW OPEN WATER
4. AVERAGE AIR TEMP PAST WEEK
5. SEA SURFACE TEMP
6. ACCUMULATED SEASONAL ICE GROWTH IN MILLIMETERS
7. ICEBERG SIGHTINGS

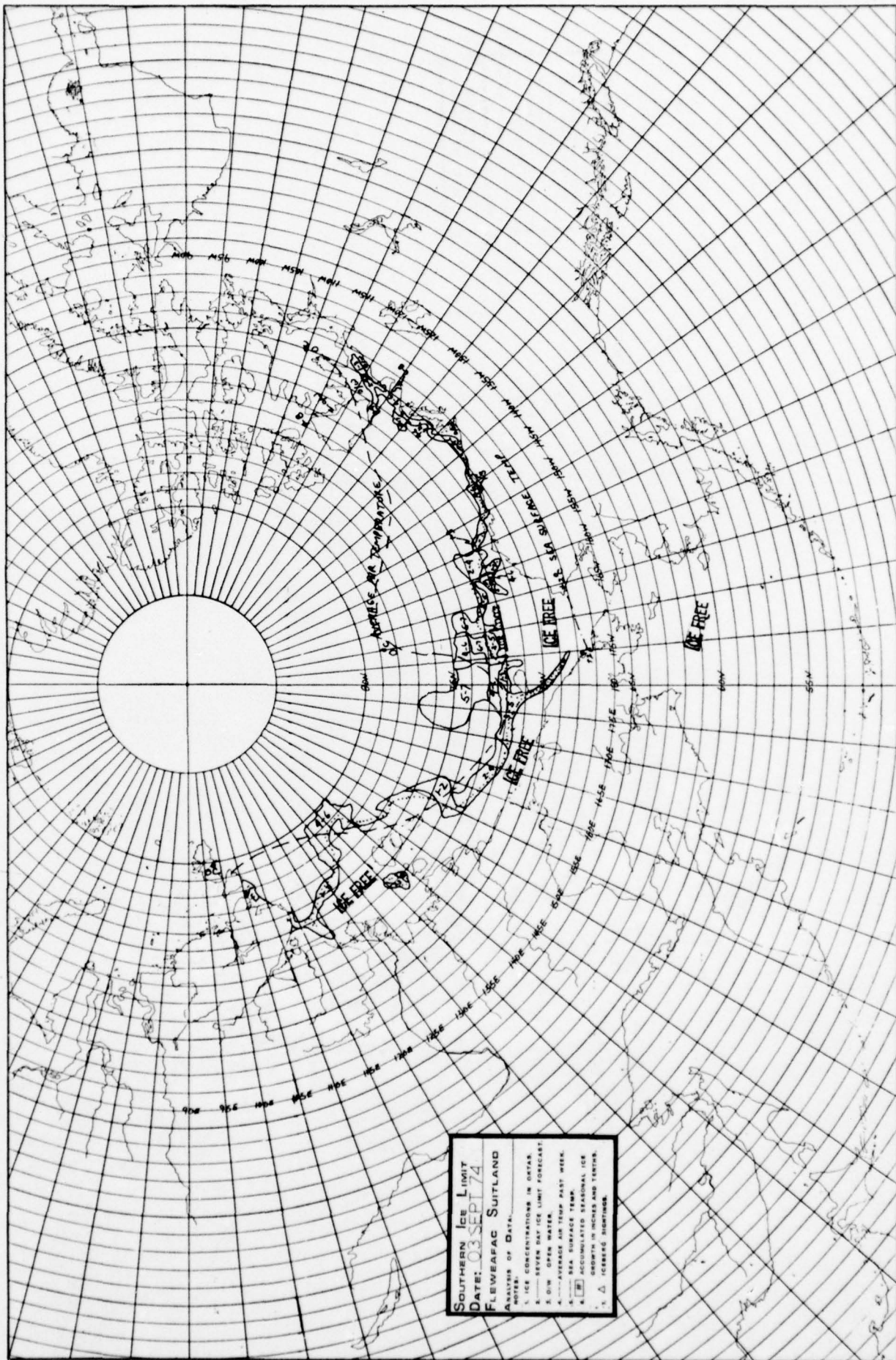


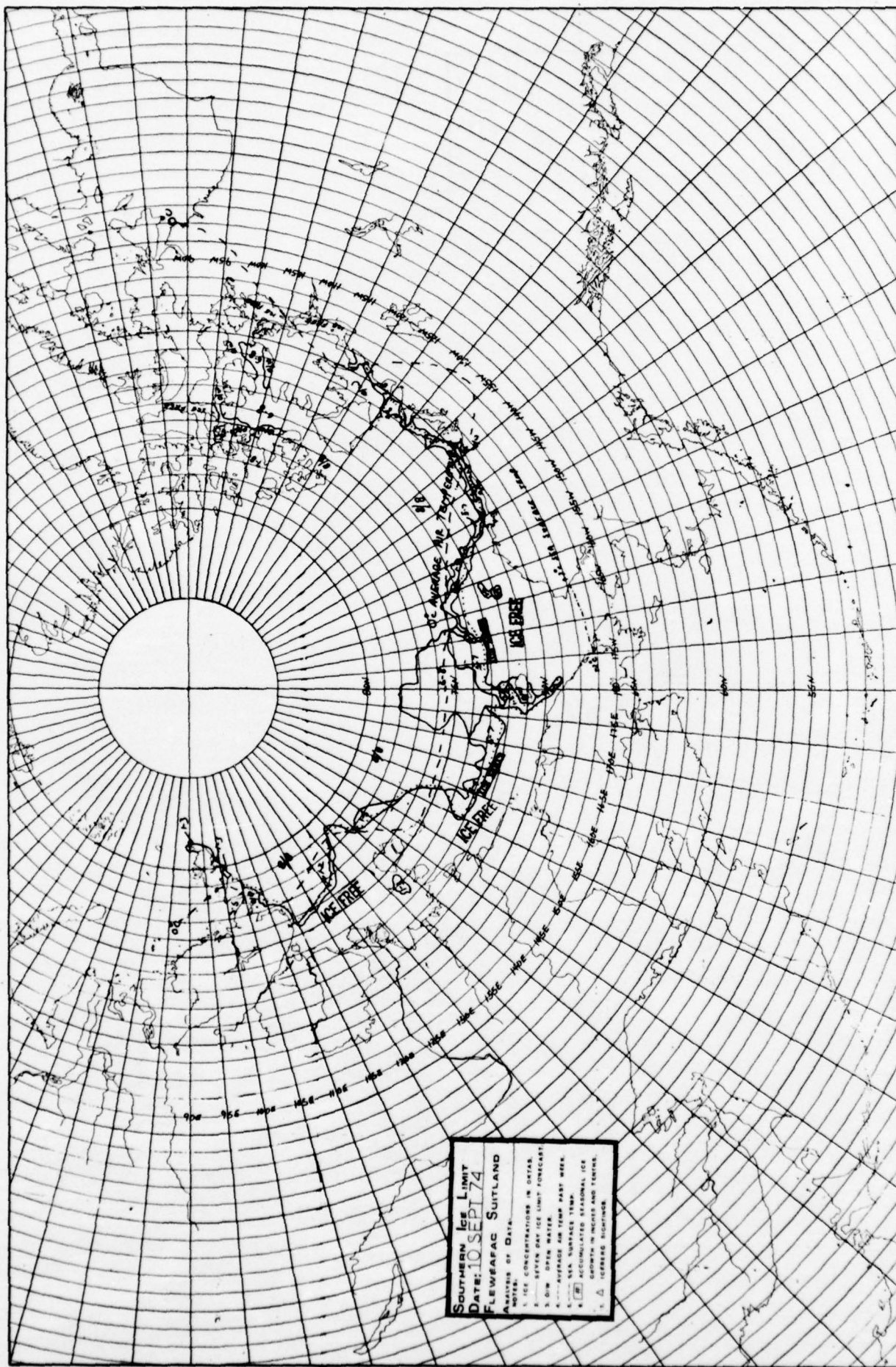


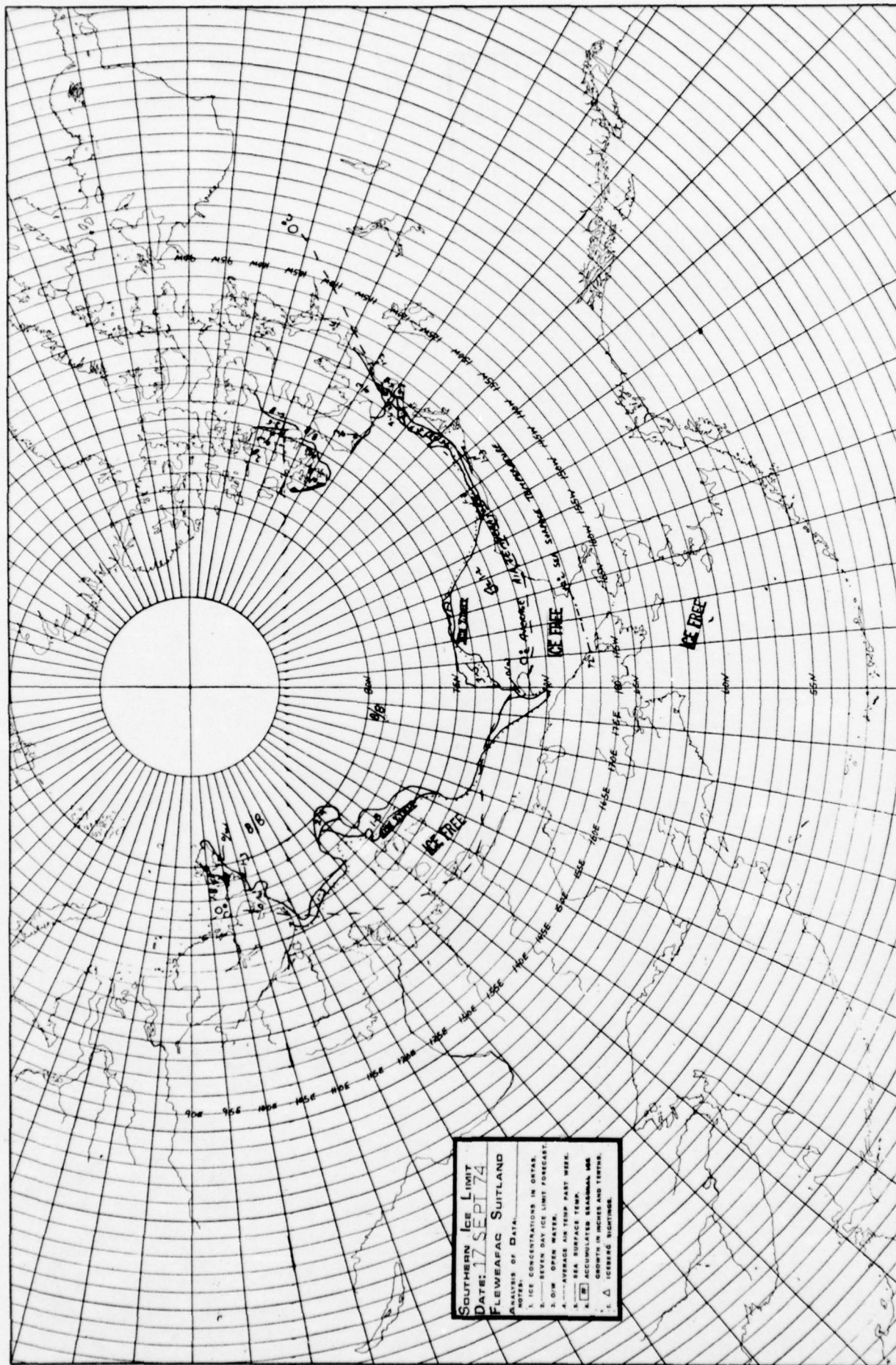


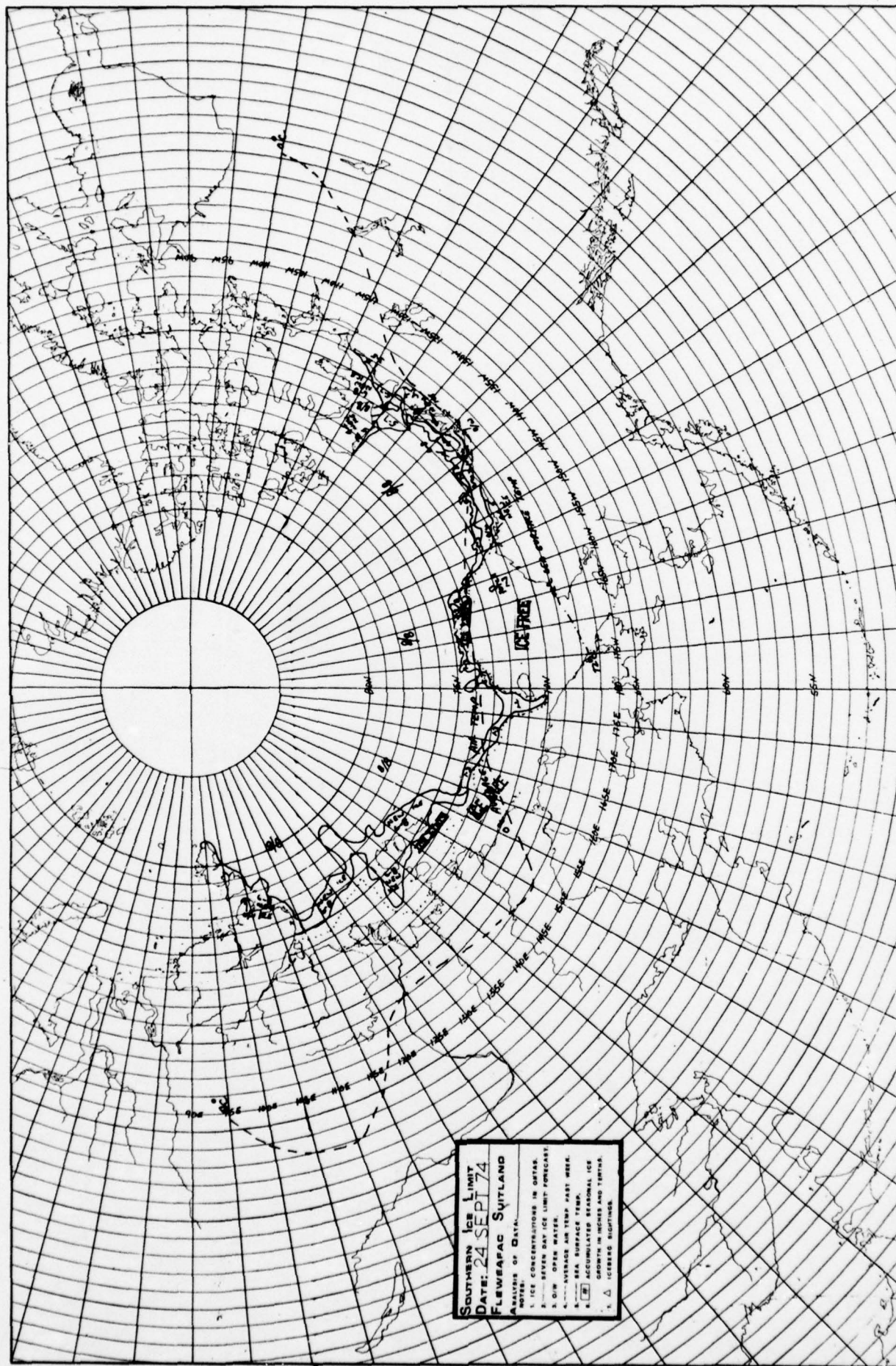


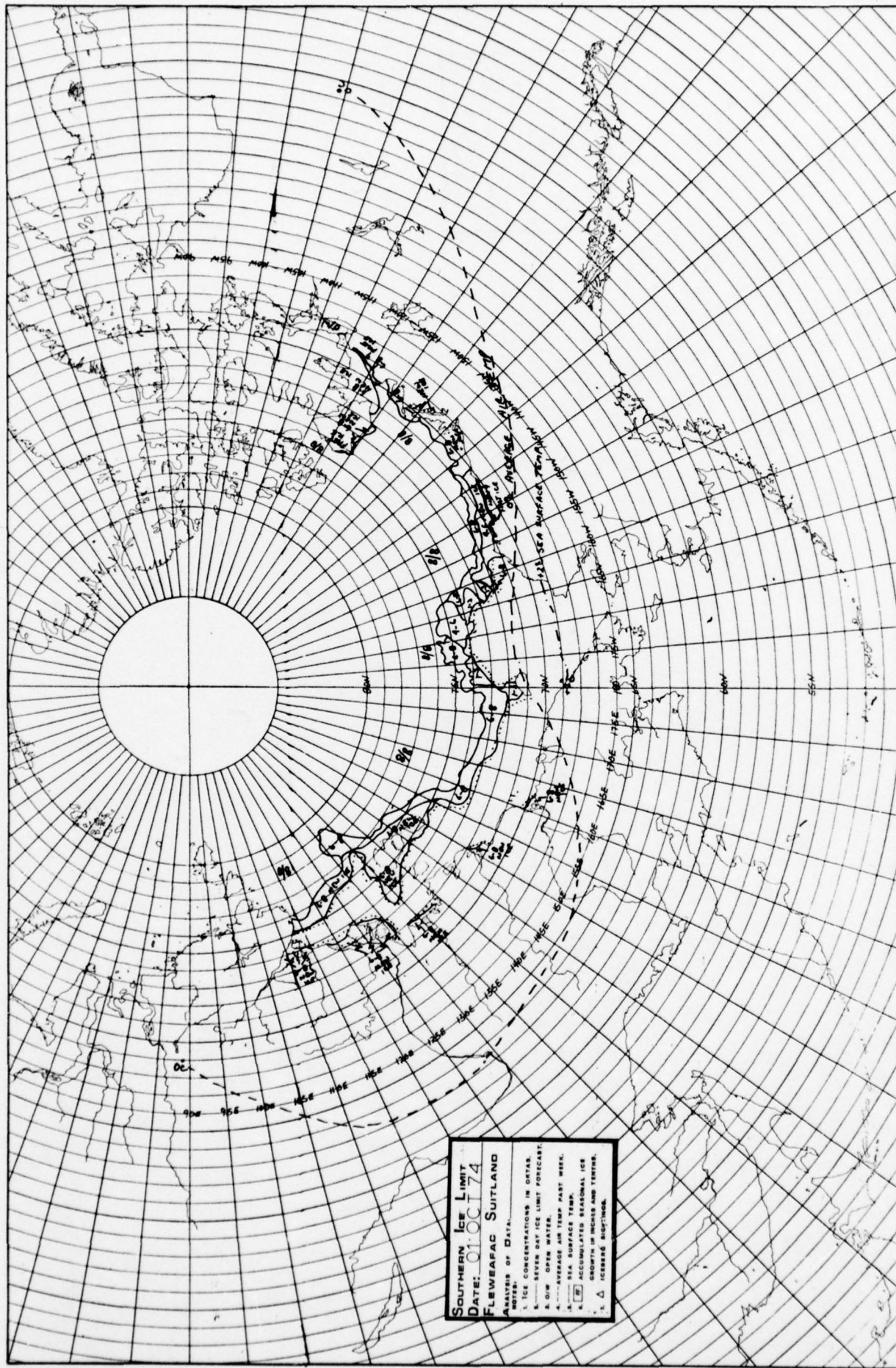


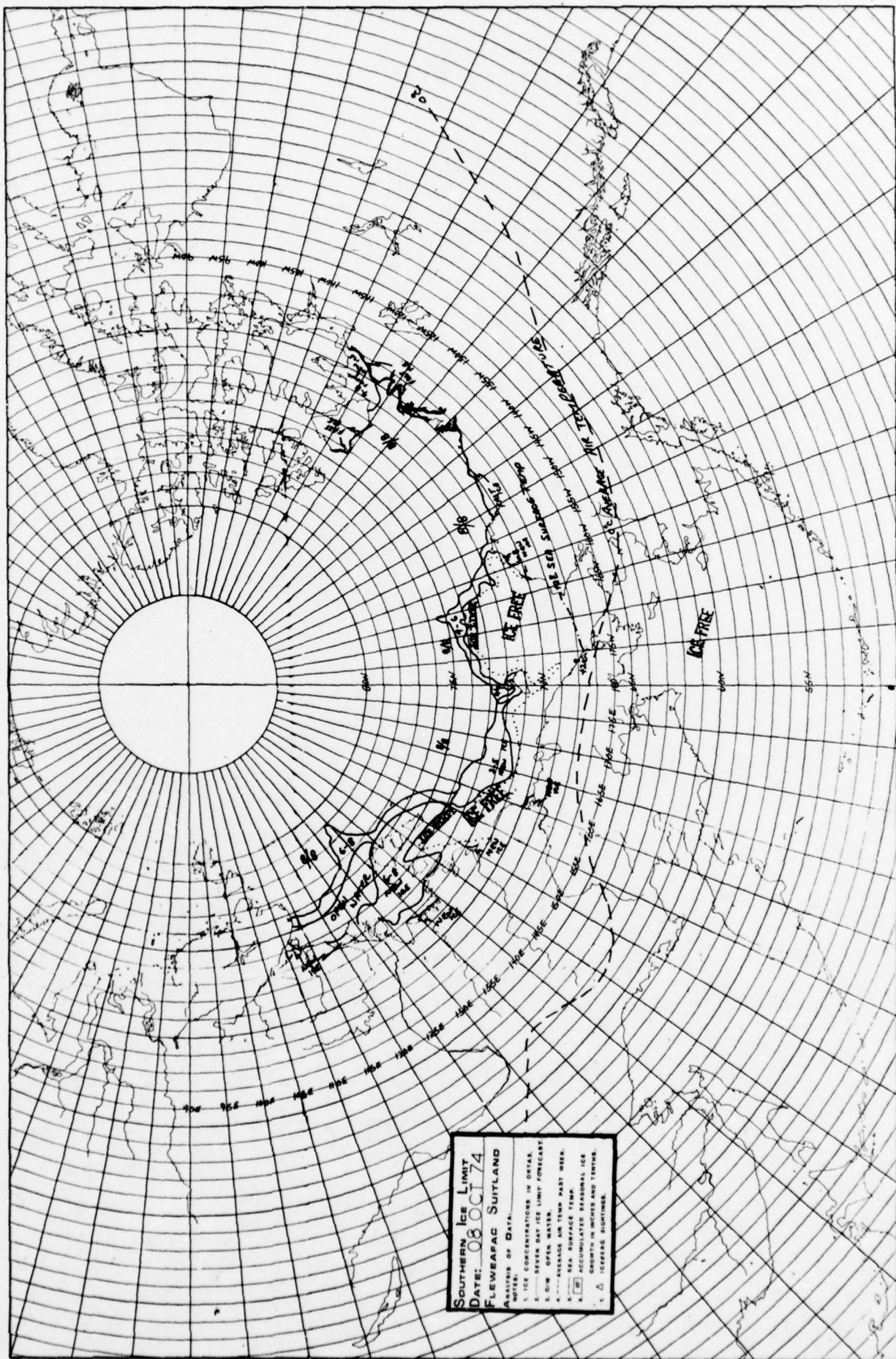


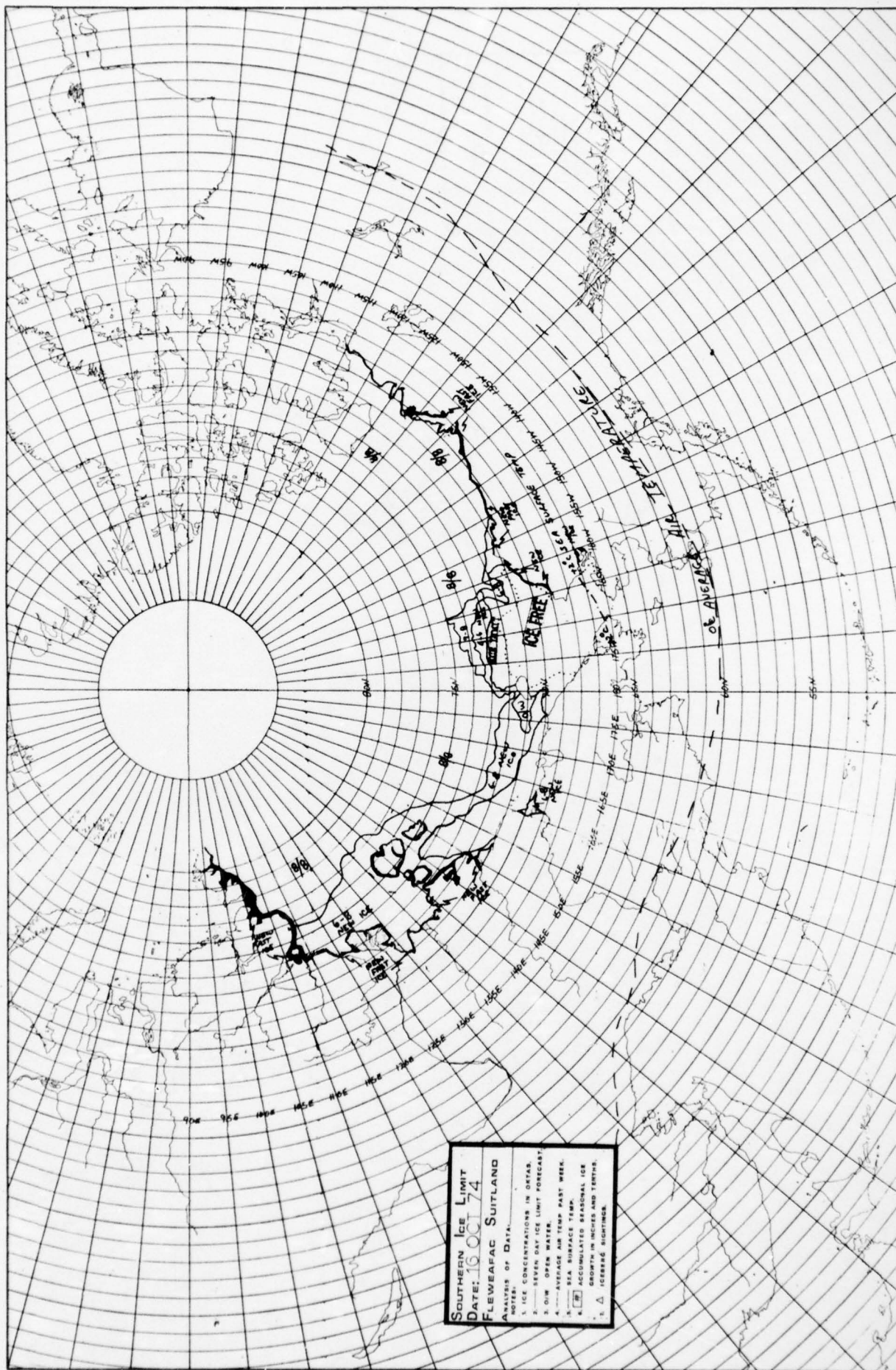






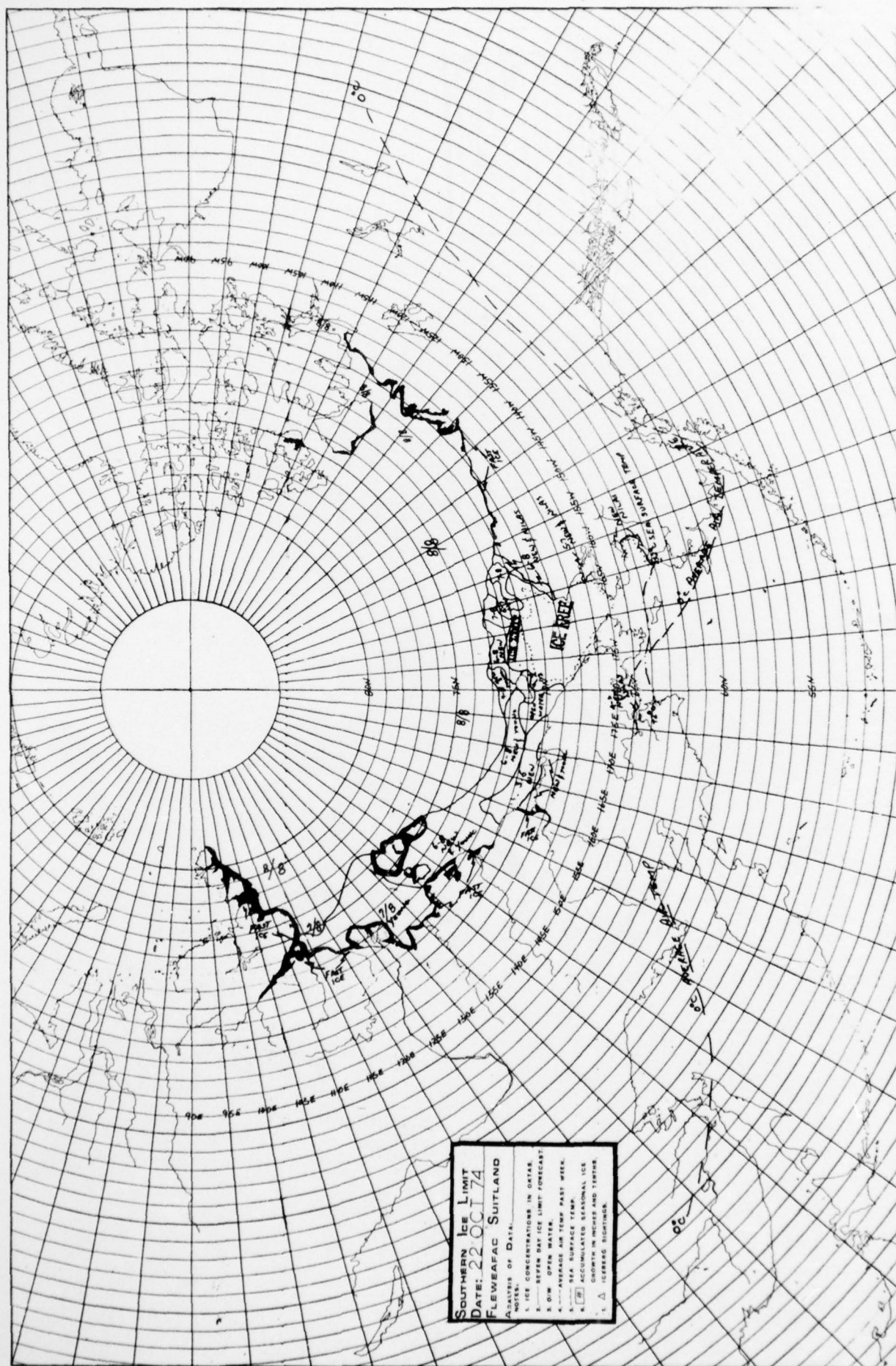


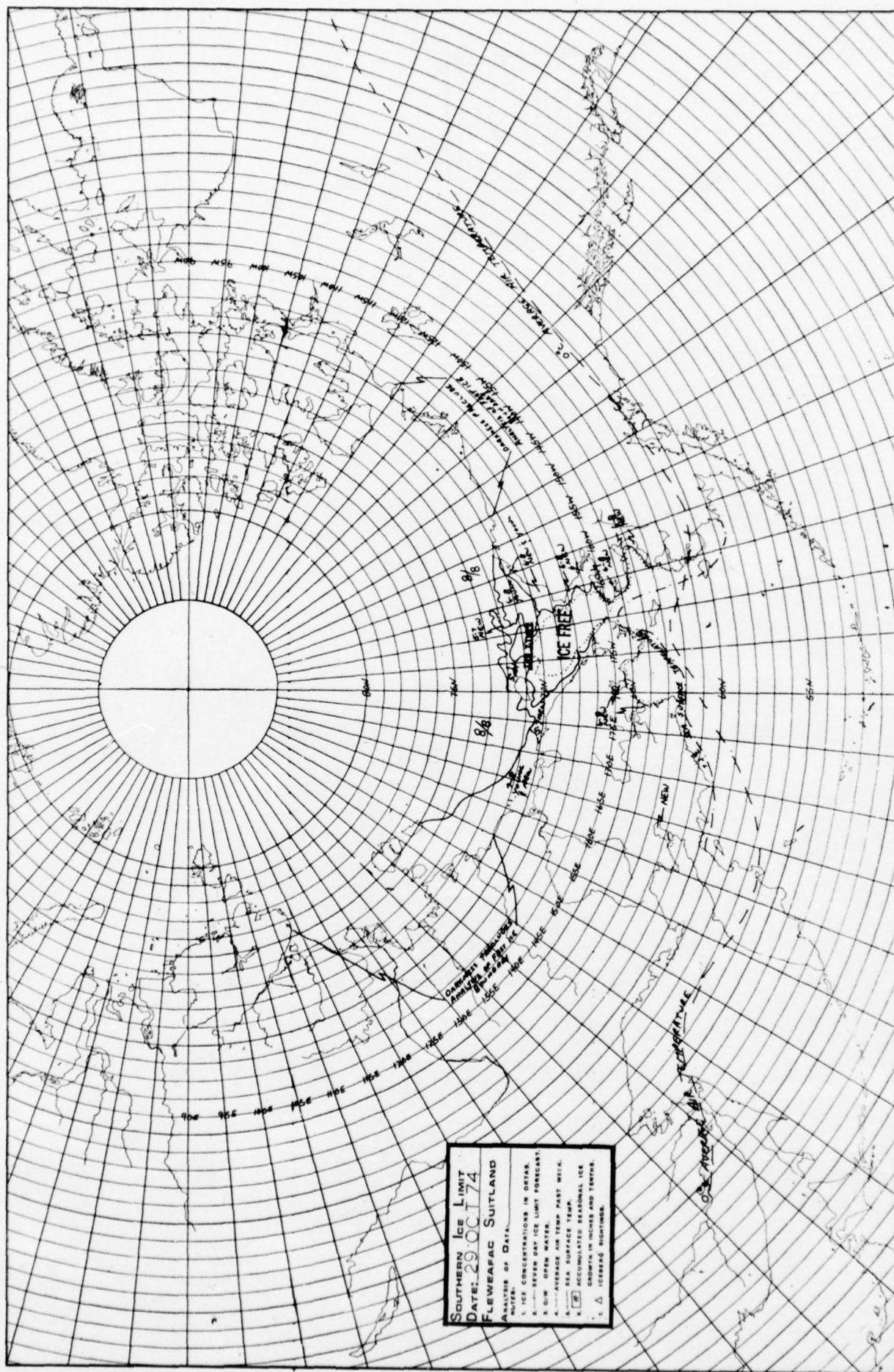


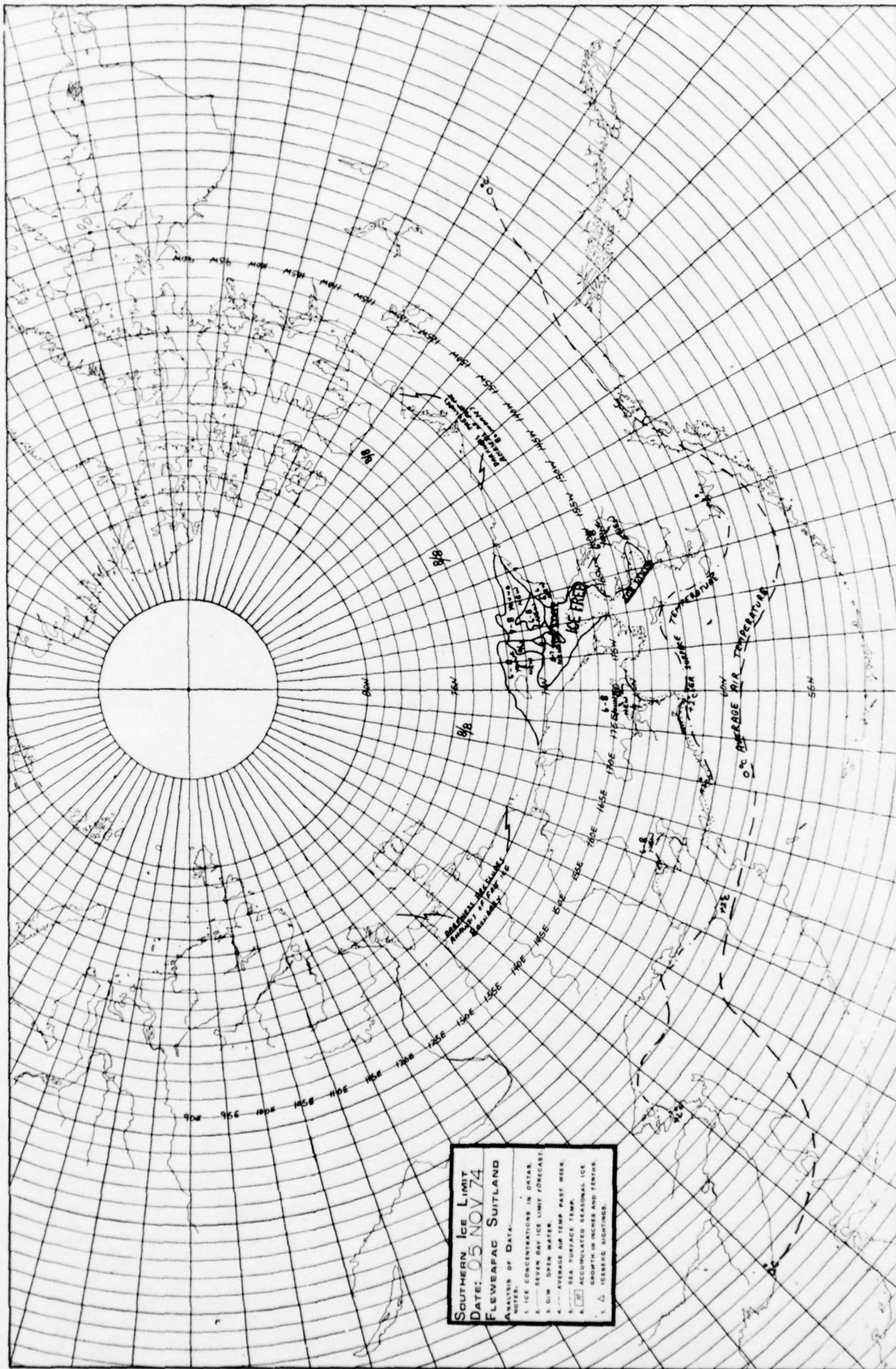


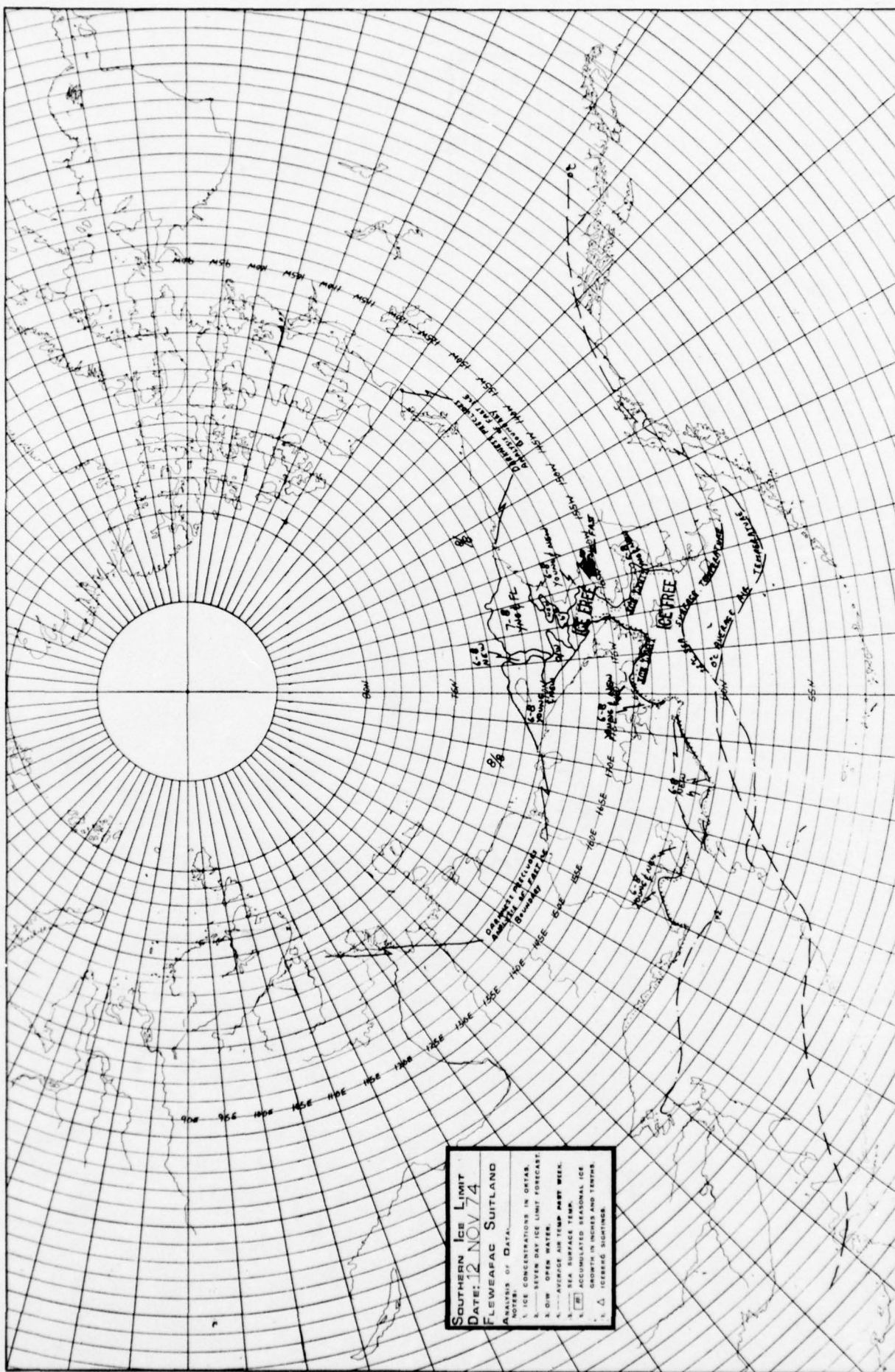
SOUTHERN ICE LIMIT
DATE: 16 OCT 74
FLEWEAFAC SUTLAND

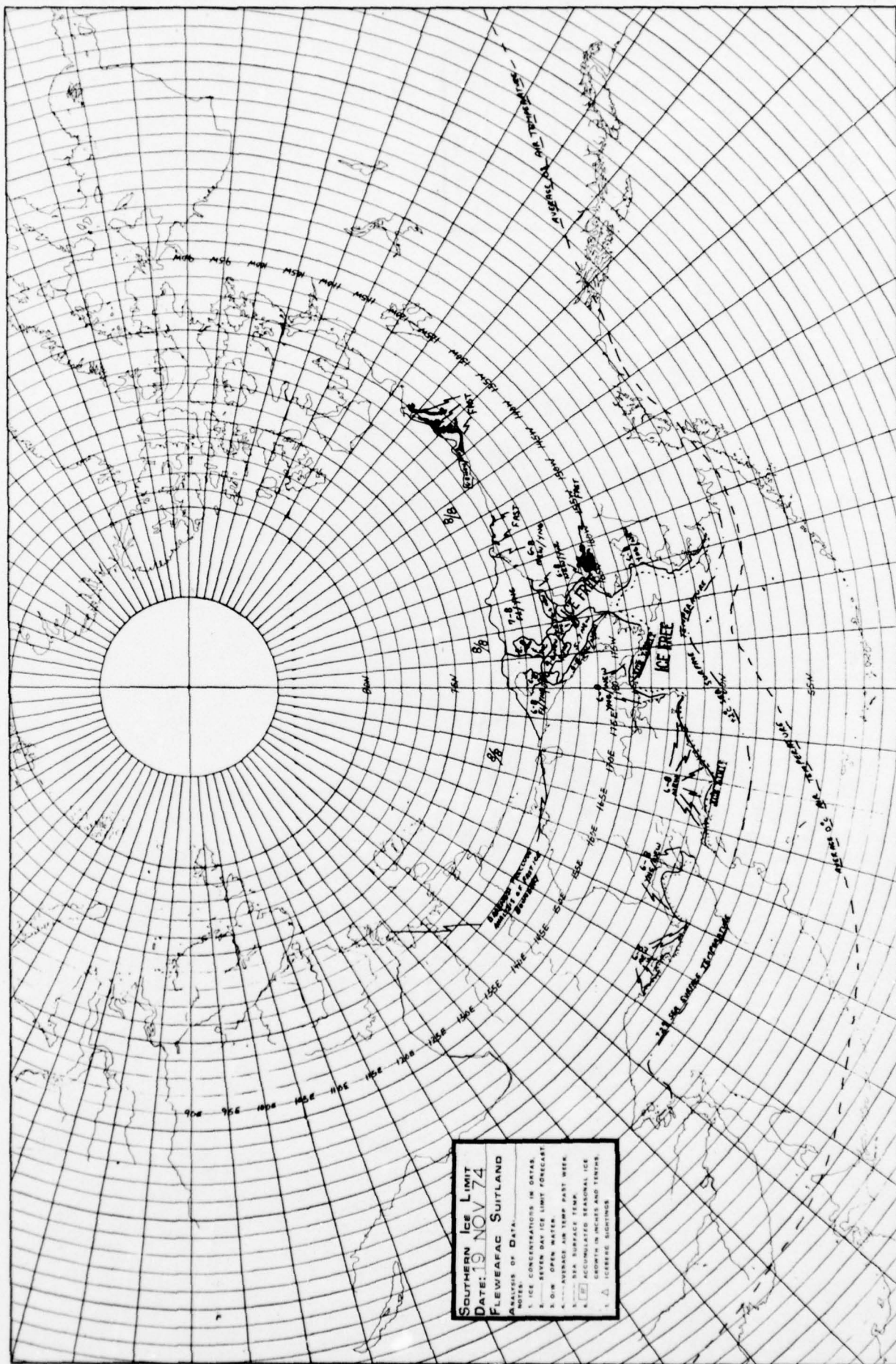
ANALYSIS OF DATA:
 1. ICE CONCENTRATIONS IN AREAS
 2. SEVEN DAY ICE LIMIT FORECAST
 3. D/W OPEN WATER
 4. AVERAGE AIR TEMP PAST WEEK
 5. SEA SURFACE TEMP
 6. ACCUMULATED SEASONAL ICE
 7. GROWTH IN INCHES AND TENTHS
 8. ICEBERG SIGHTING

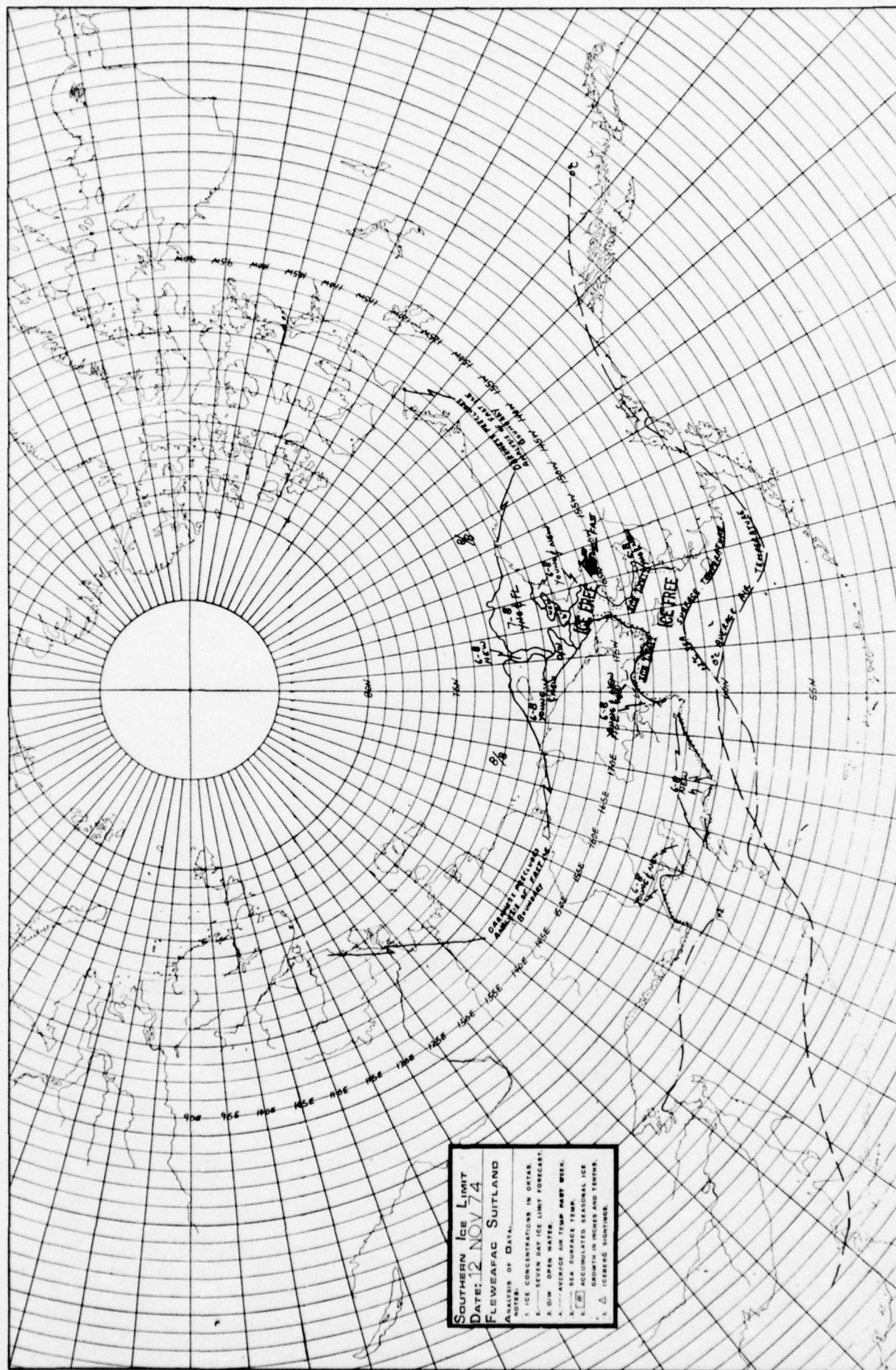




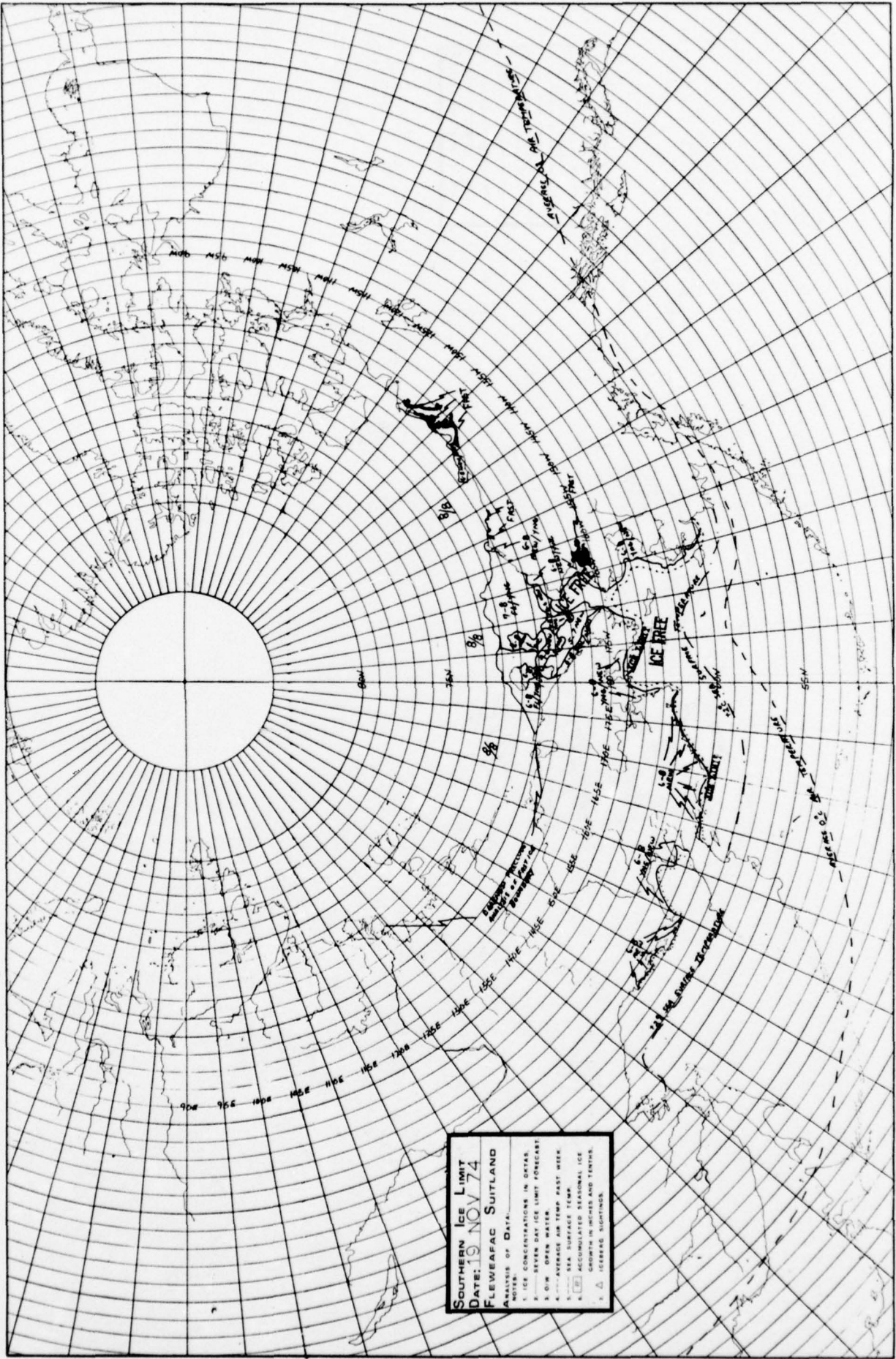


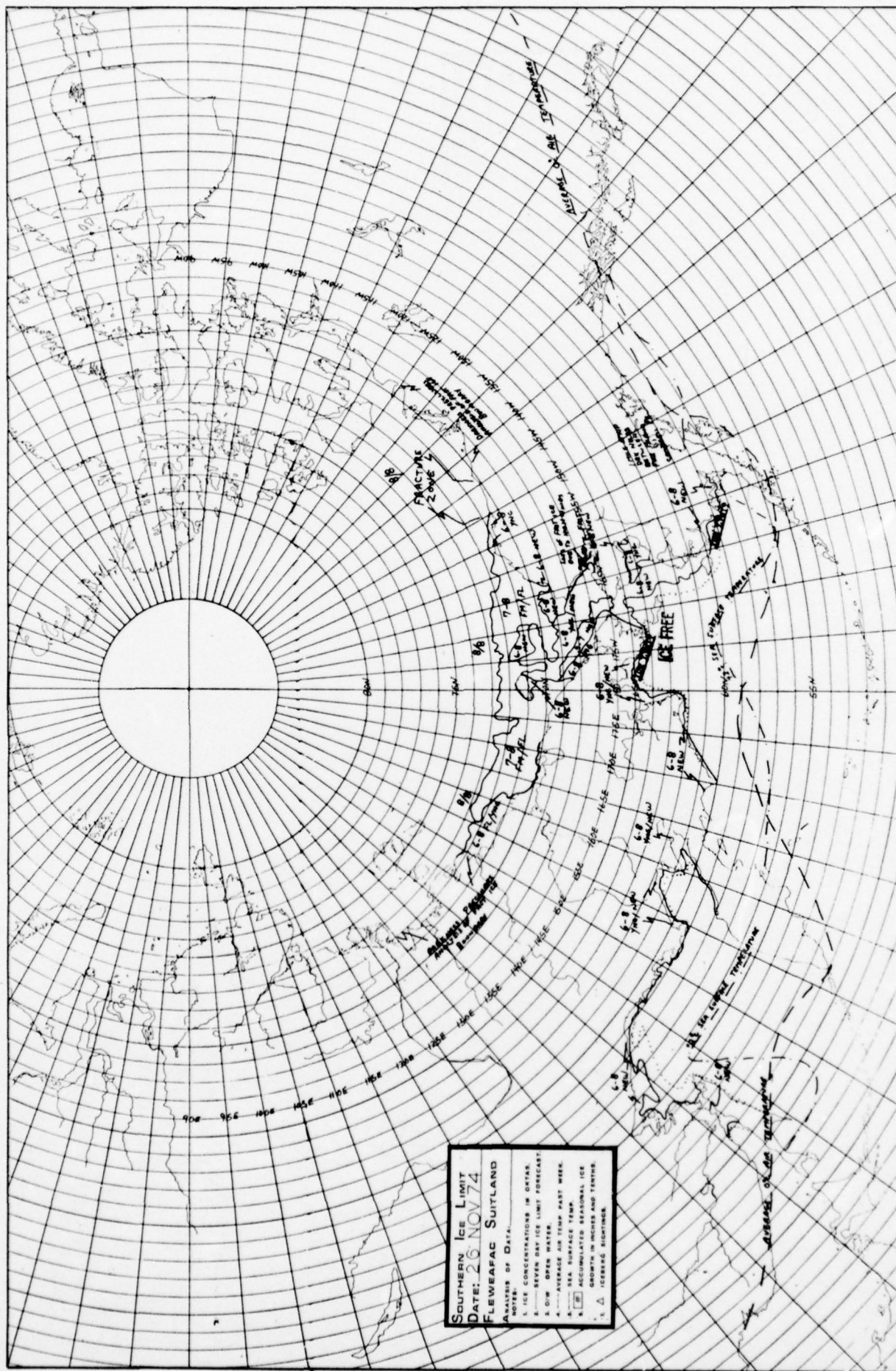


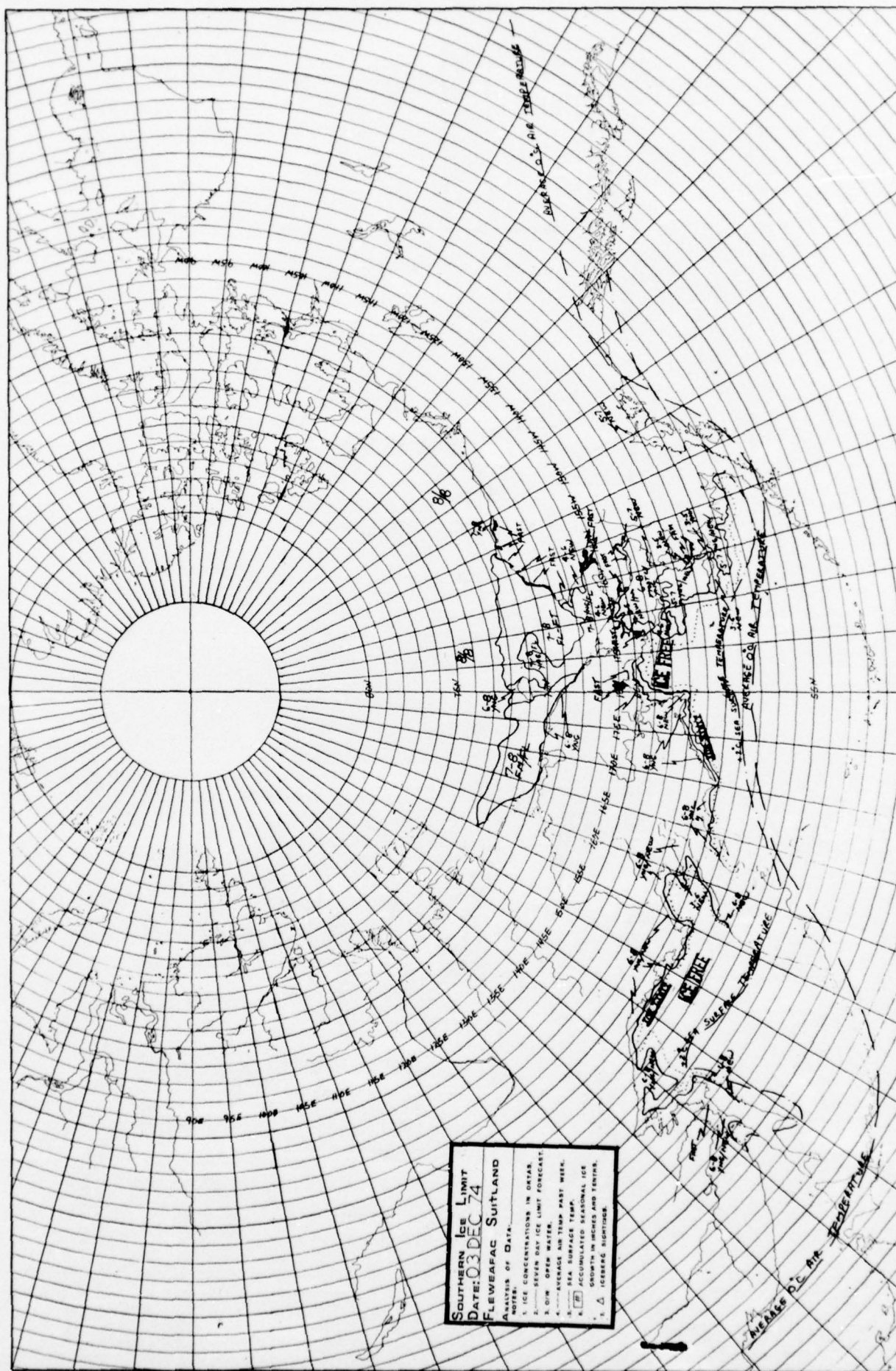


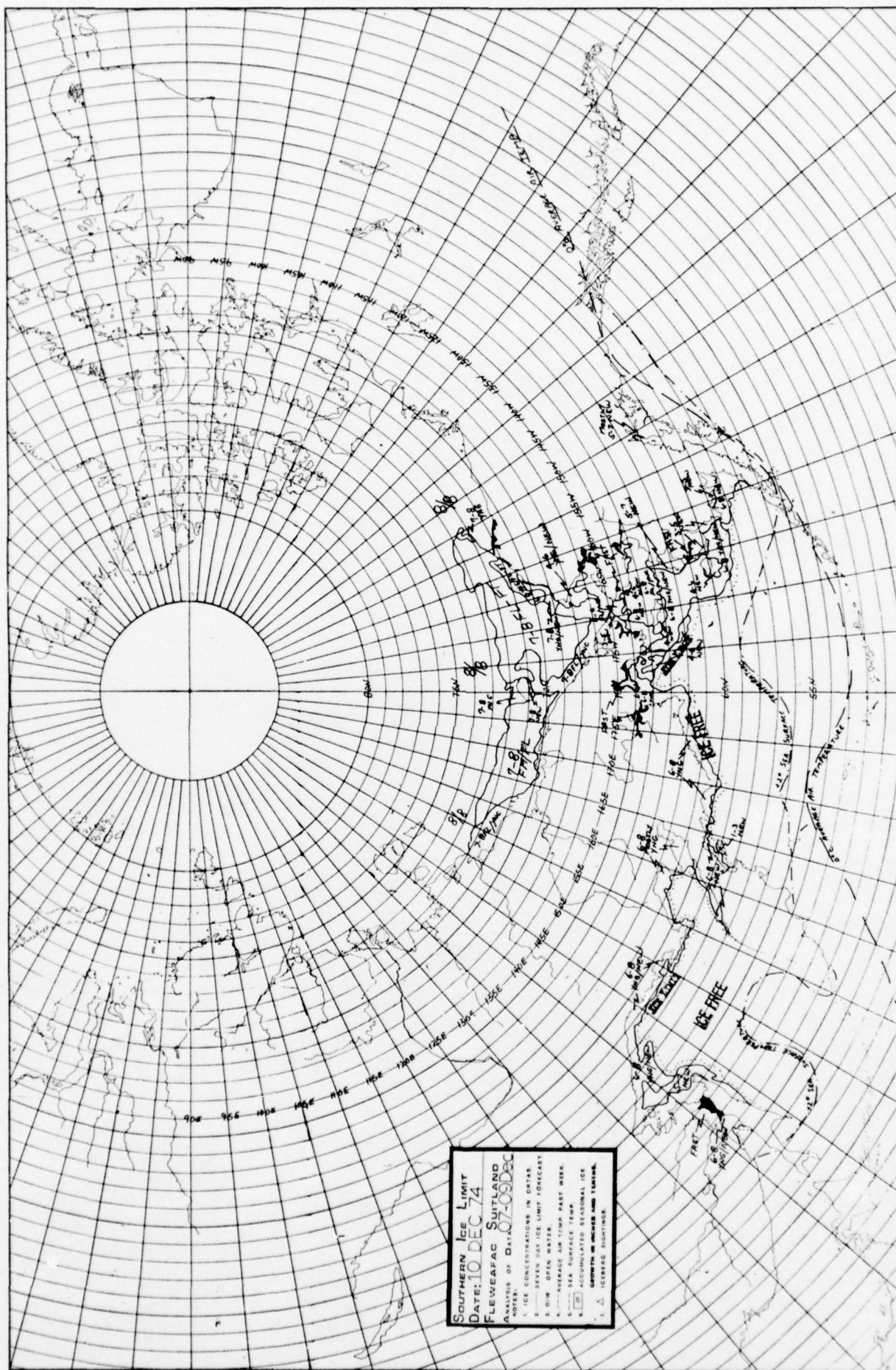


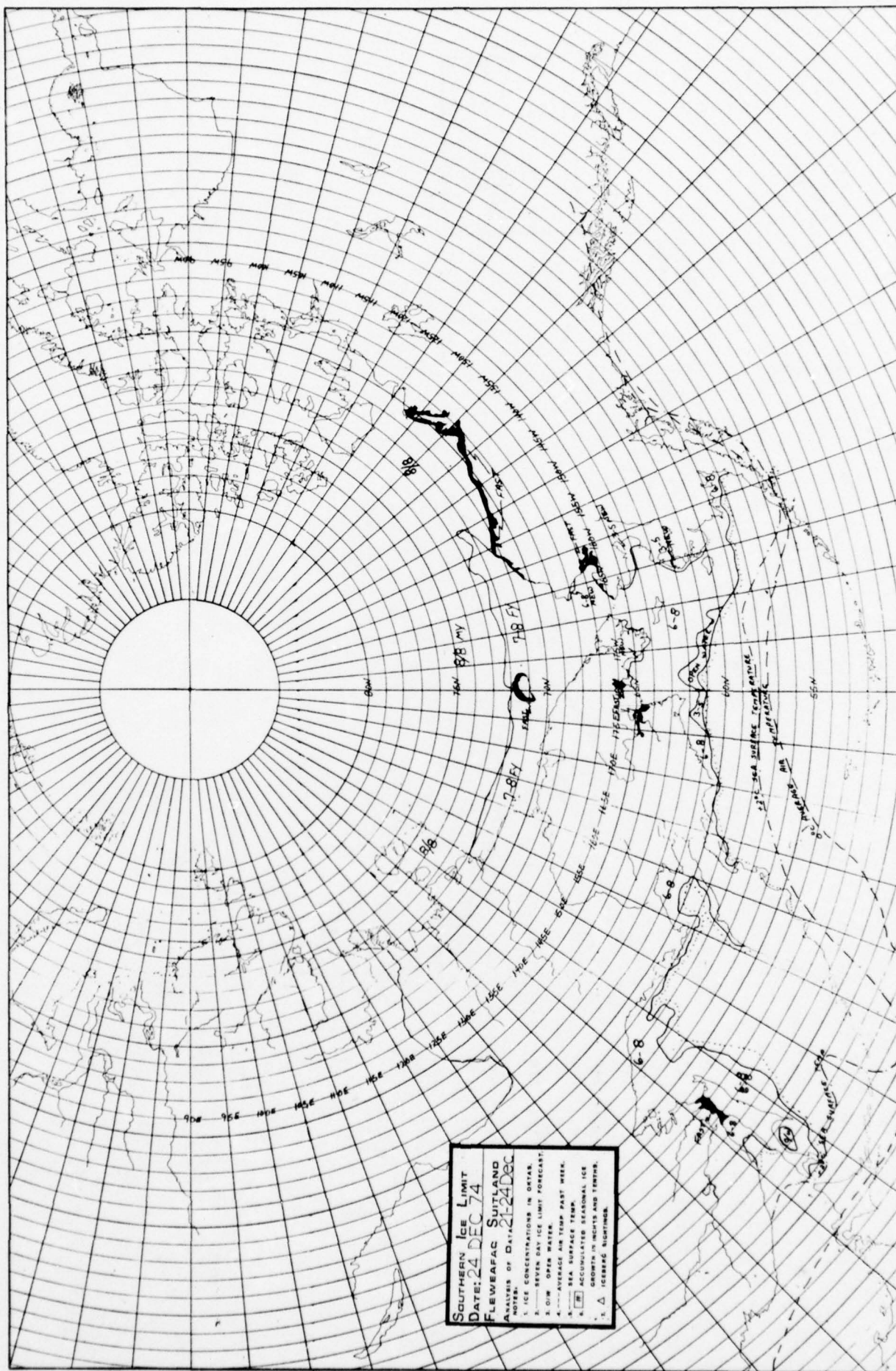
SOUTHERN ICE LIMIT
 DATE: 12 NOV 74
 FLEWELAC SUITLAND
 ANALYSIS OF DATA
 NOTES:
 1. ICE CONCENTRATIONS IN DATA.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. G.W. OPEN WATER.
 4. AIRCRAFT AIR TEMP. PART WIER.
 5. SEA SURFACE TEMP.
 6. ACCUMULATED SEASONAL ICE
 7. INCHES IN HIGHER AND TENTHS.
 8. CERRAD SCOUTING.

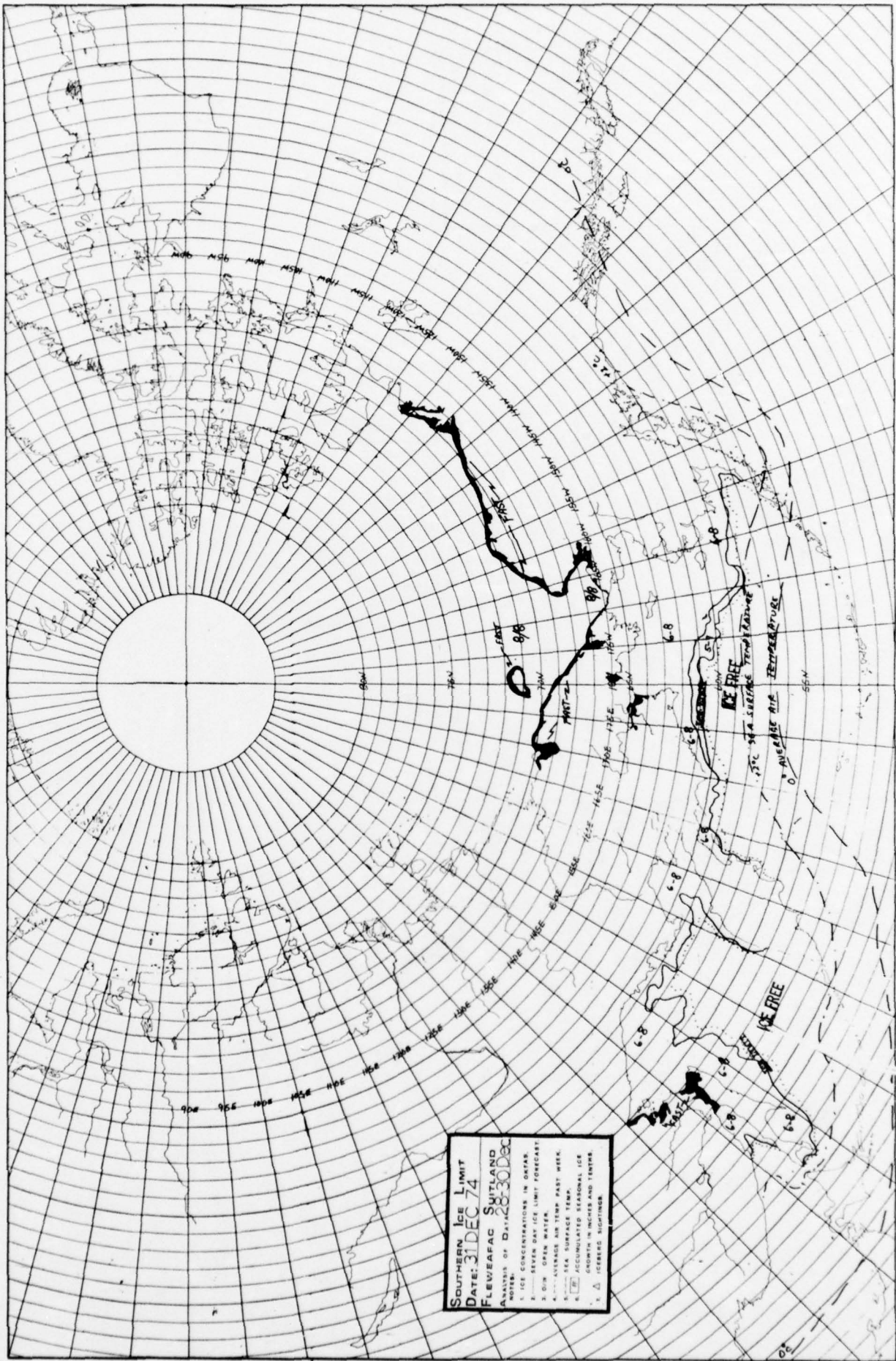


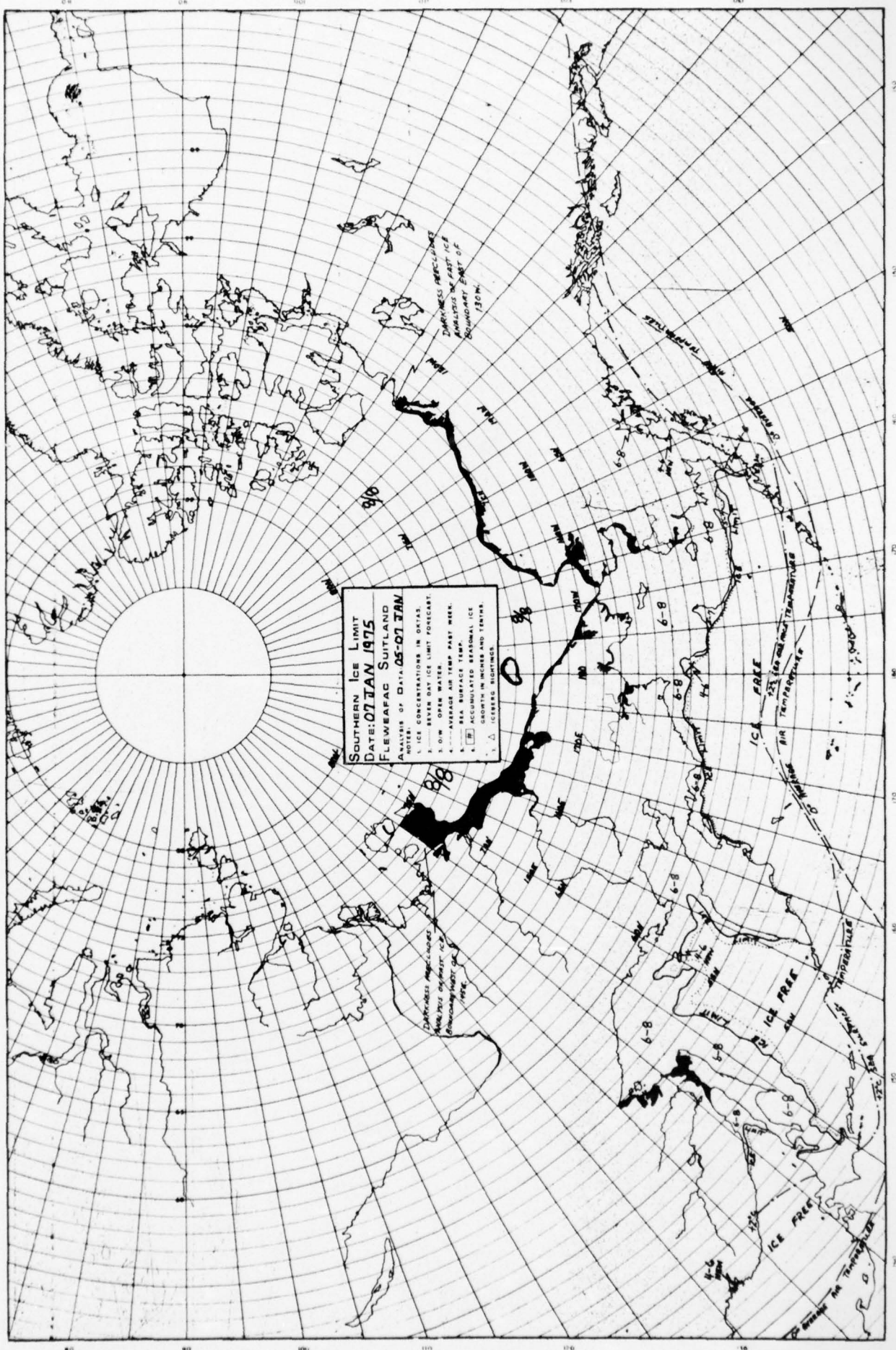


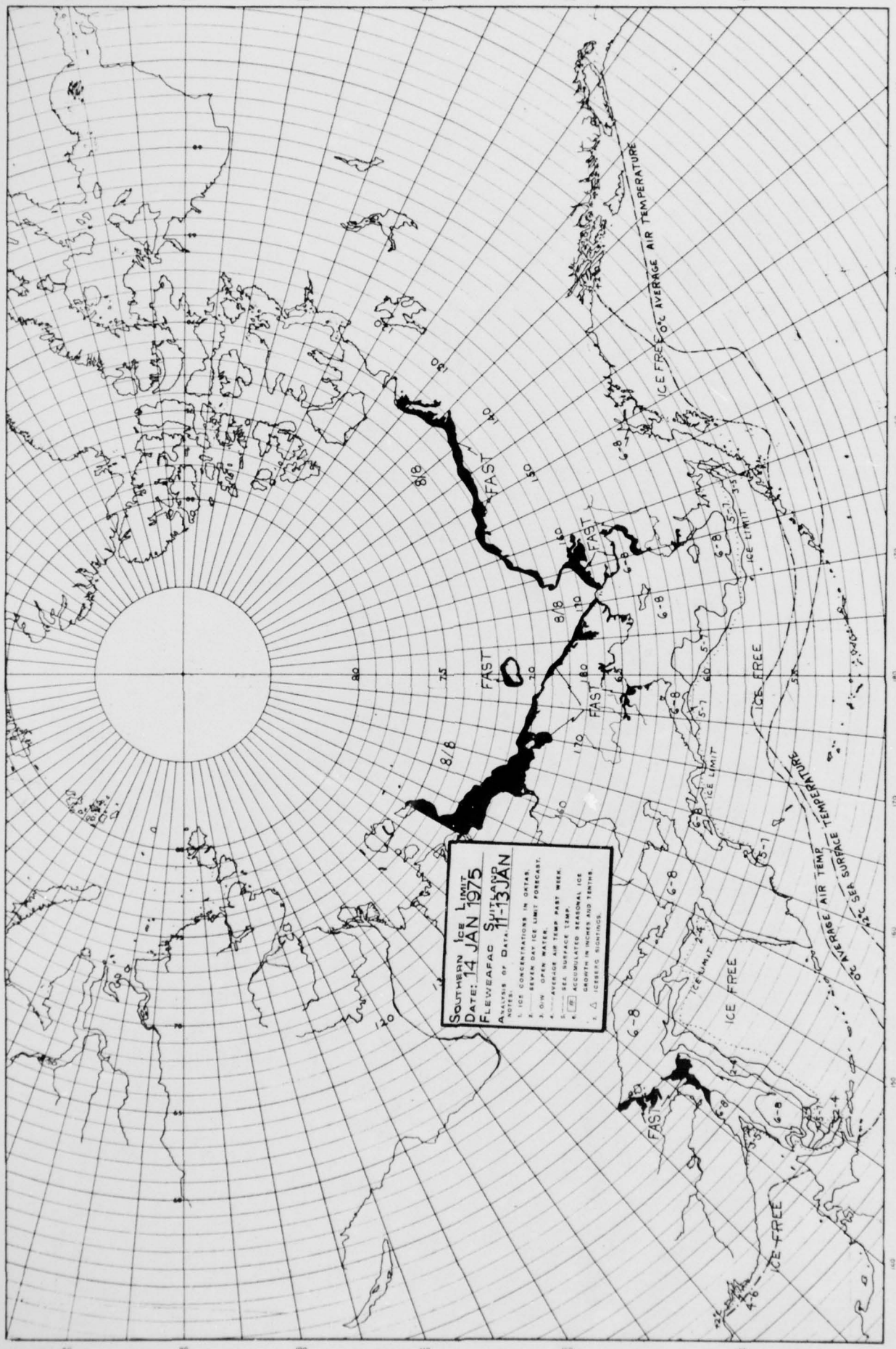


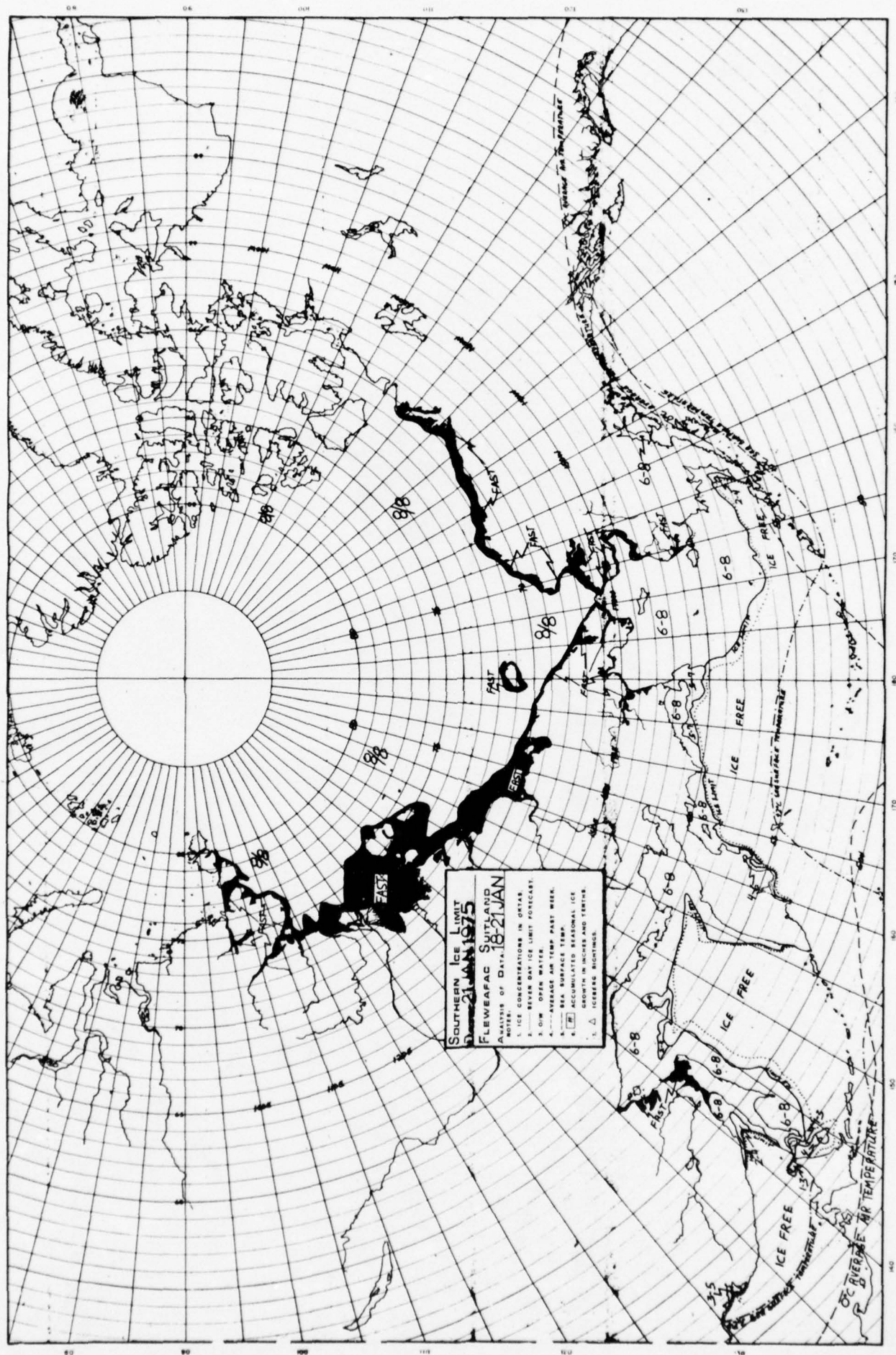


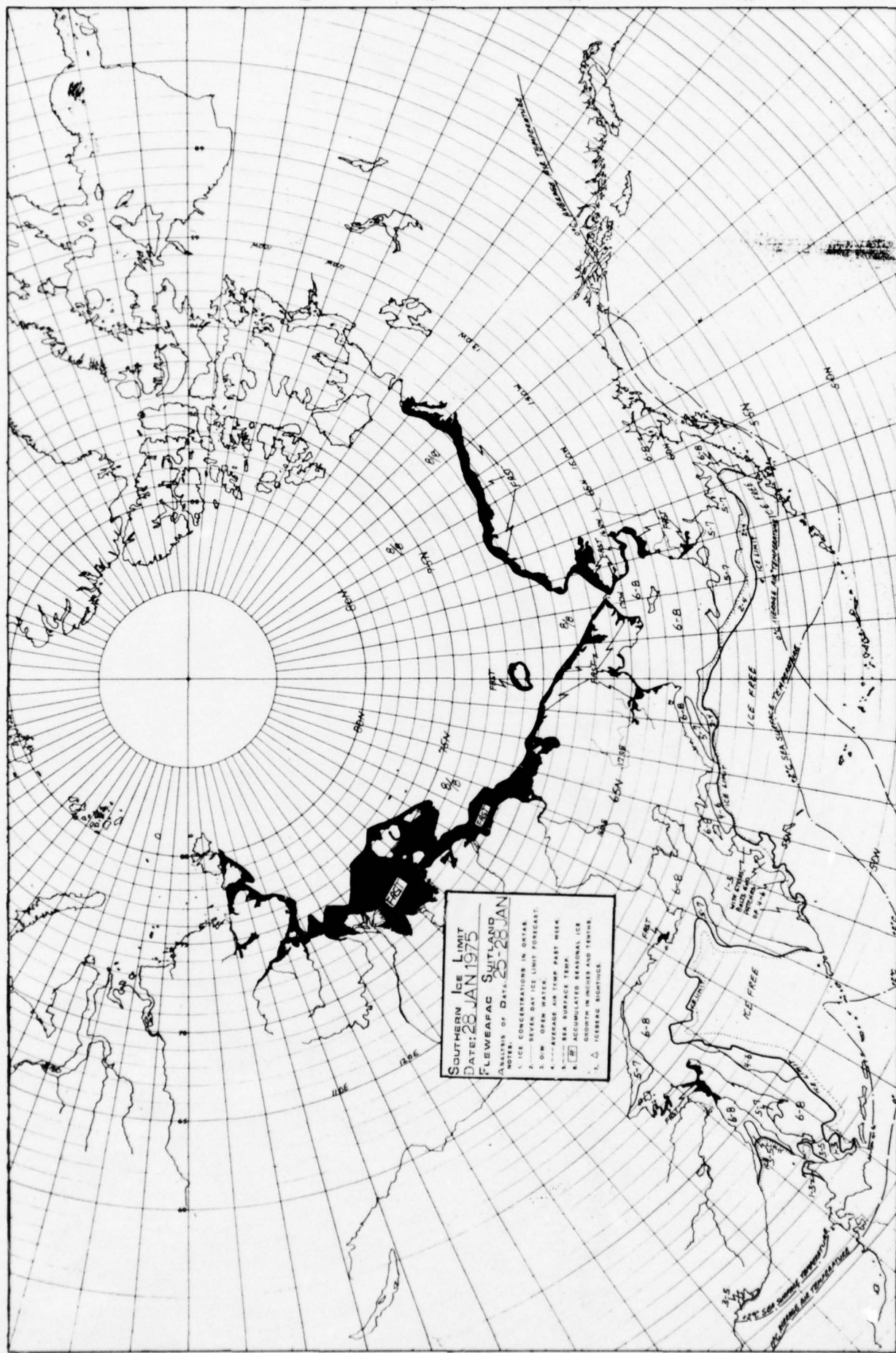


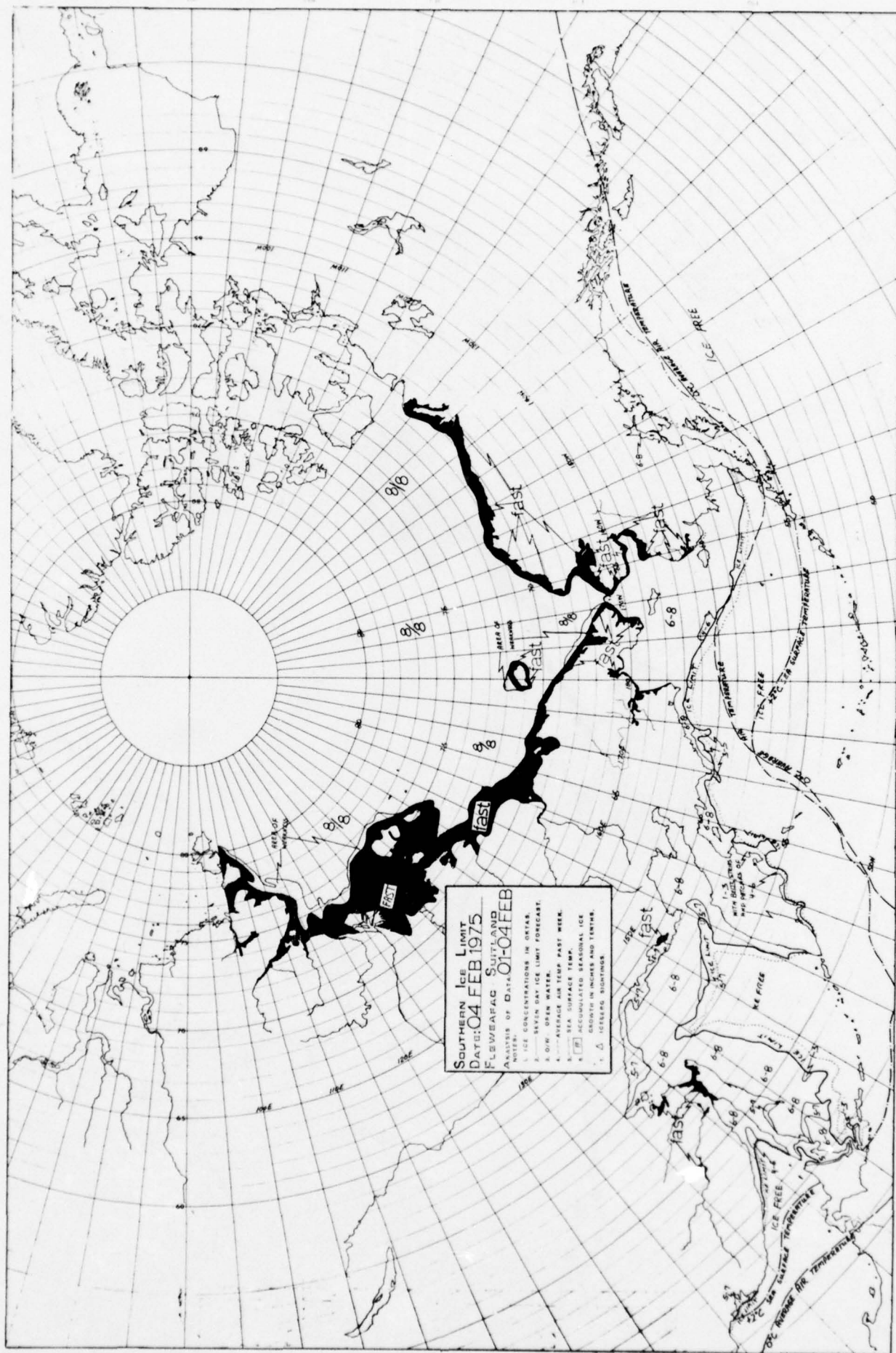


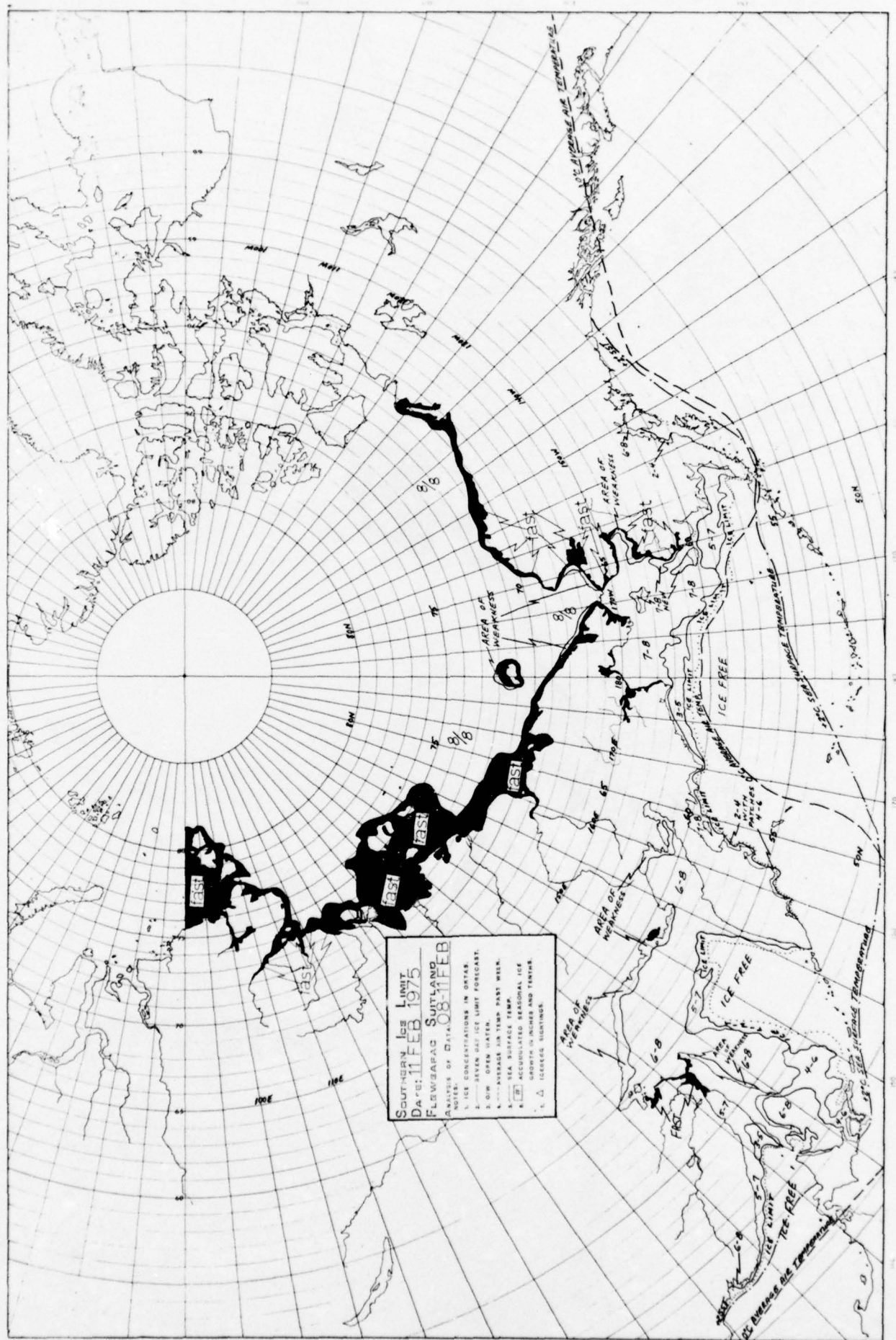


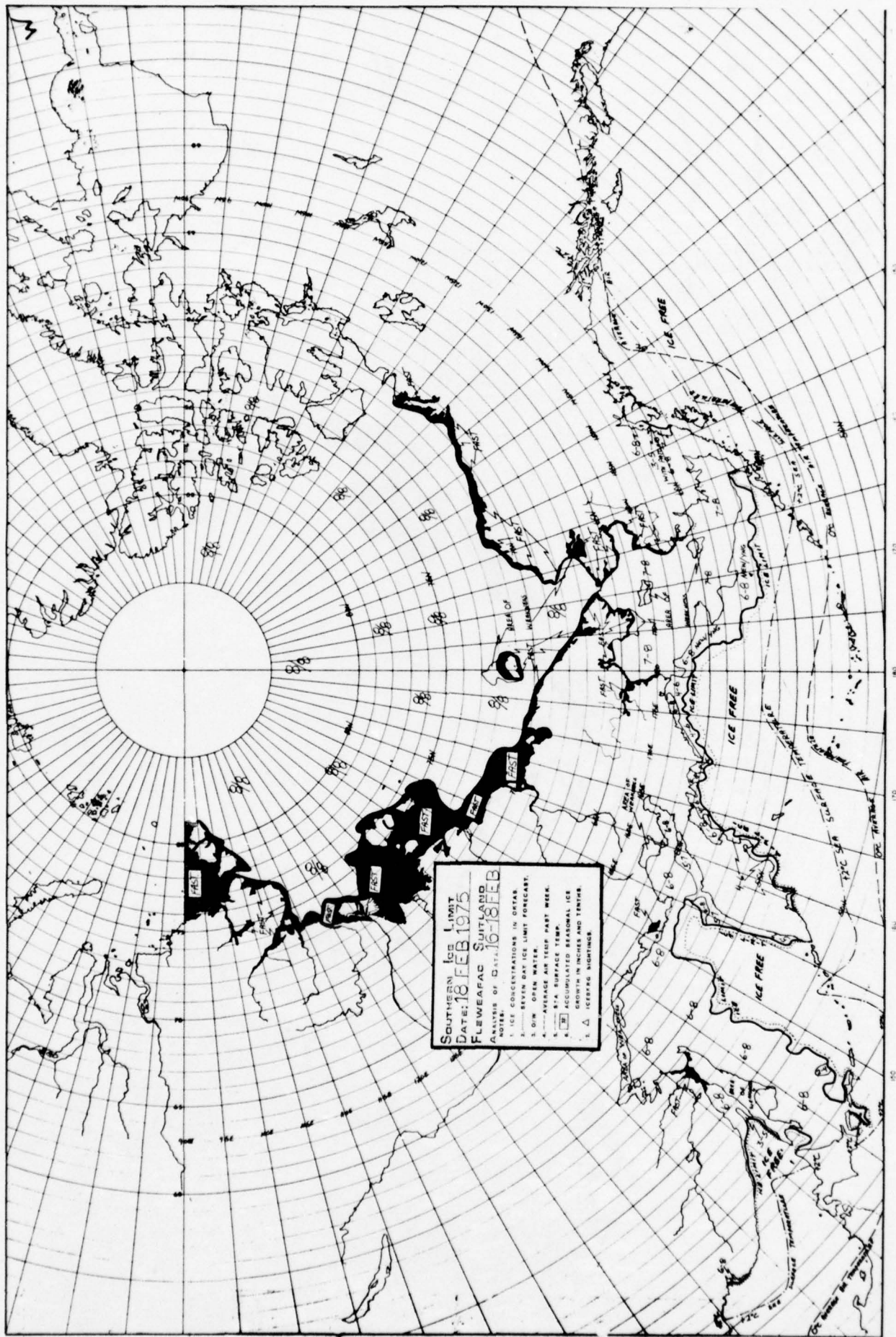


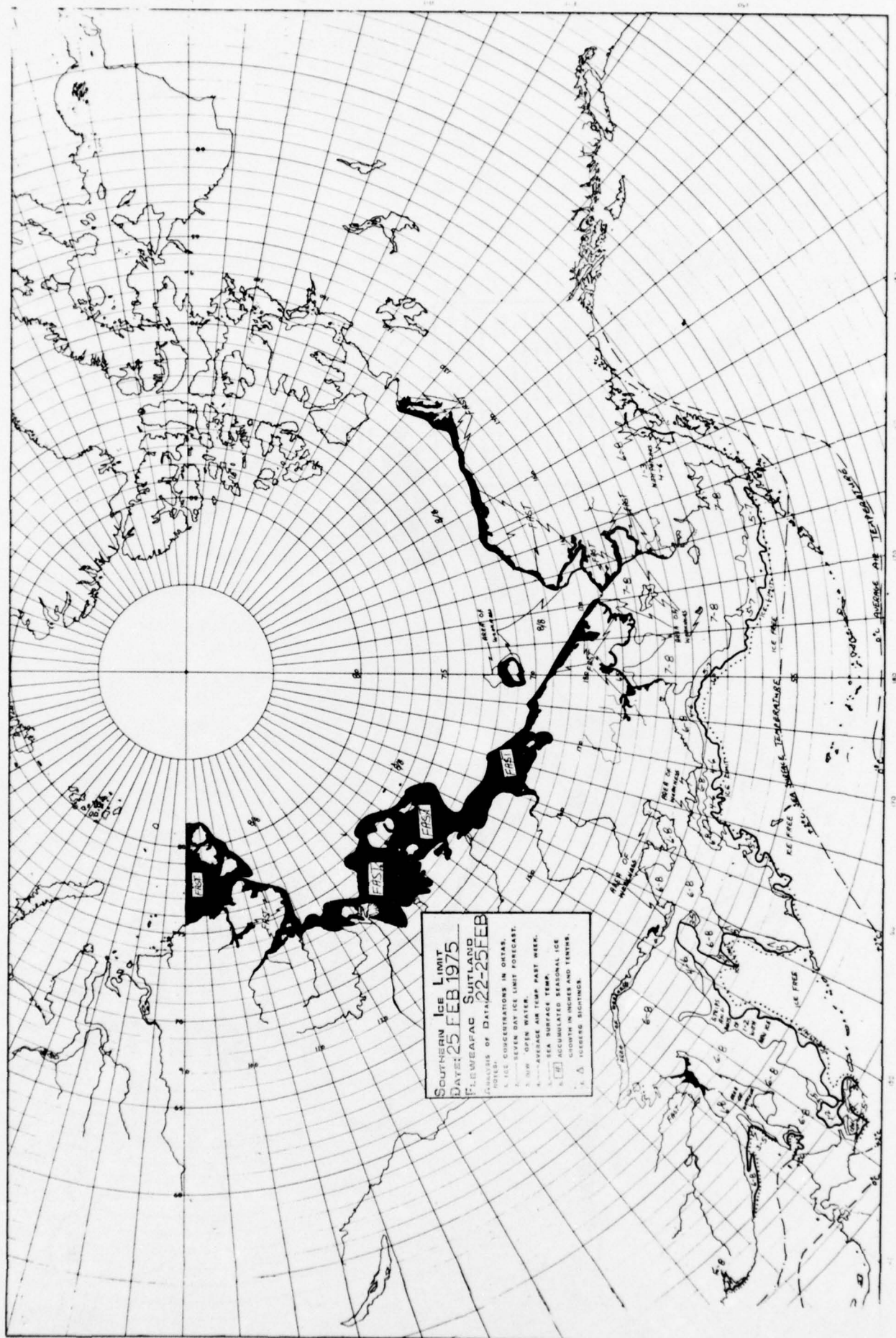


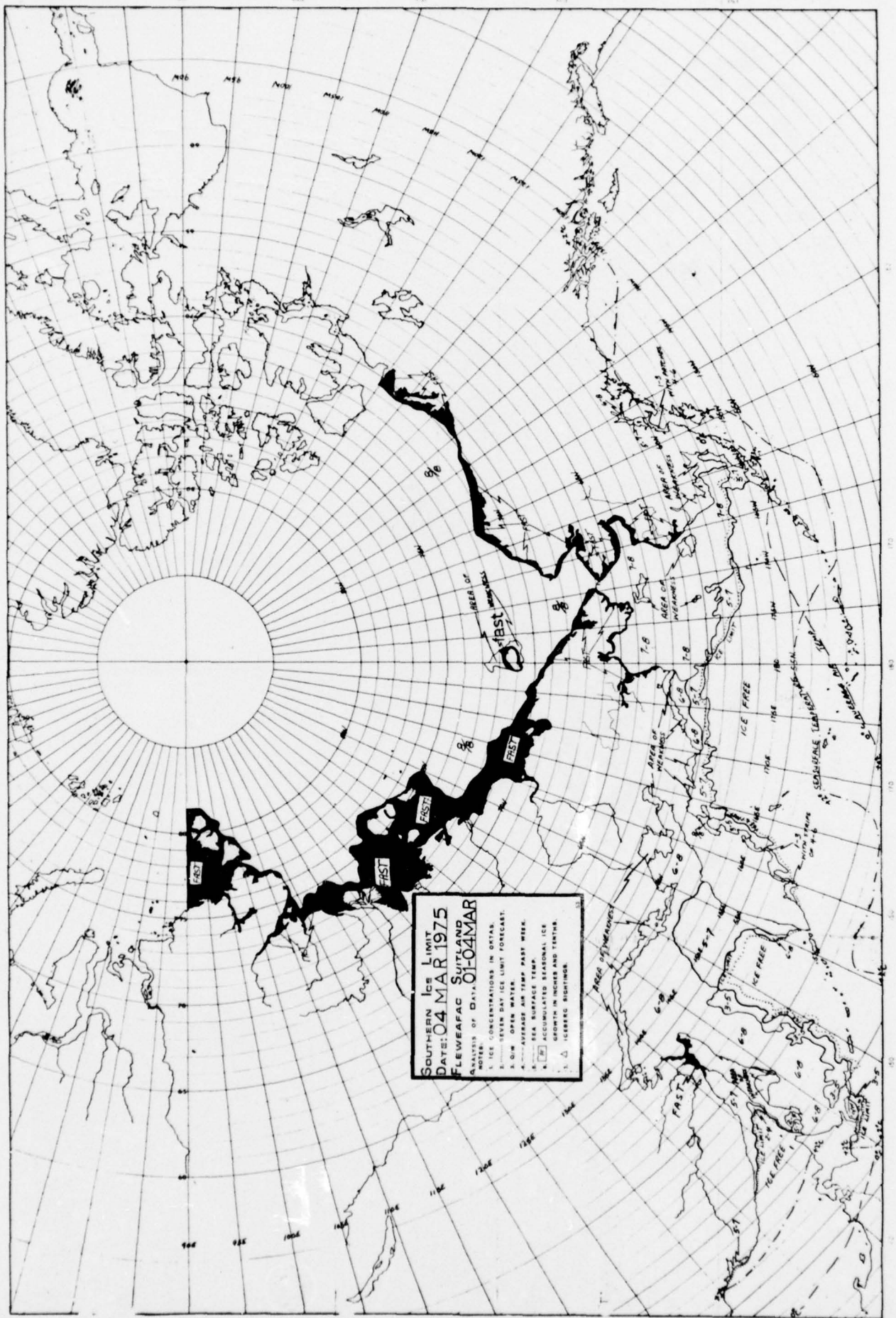


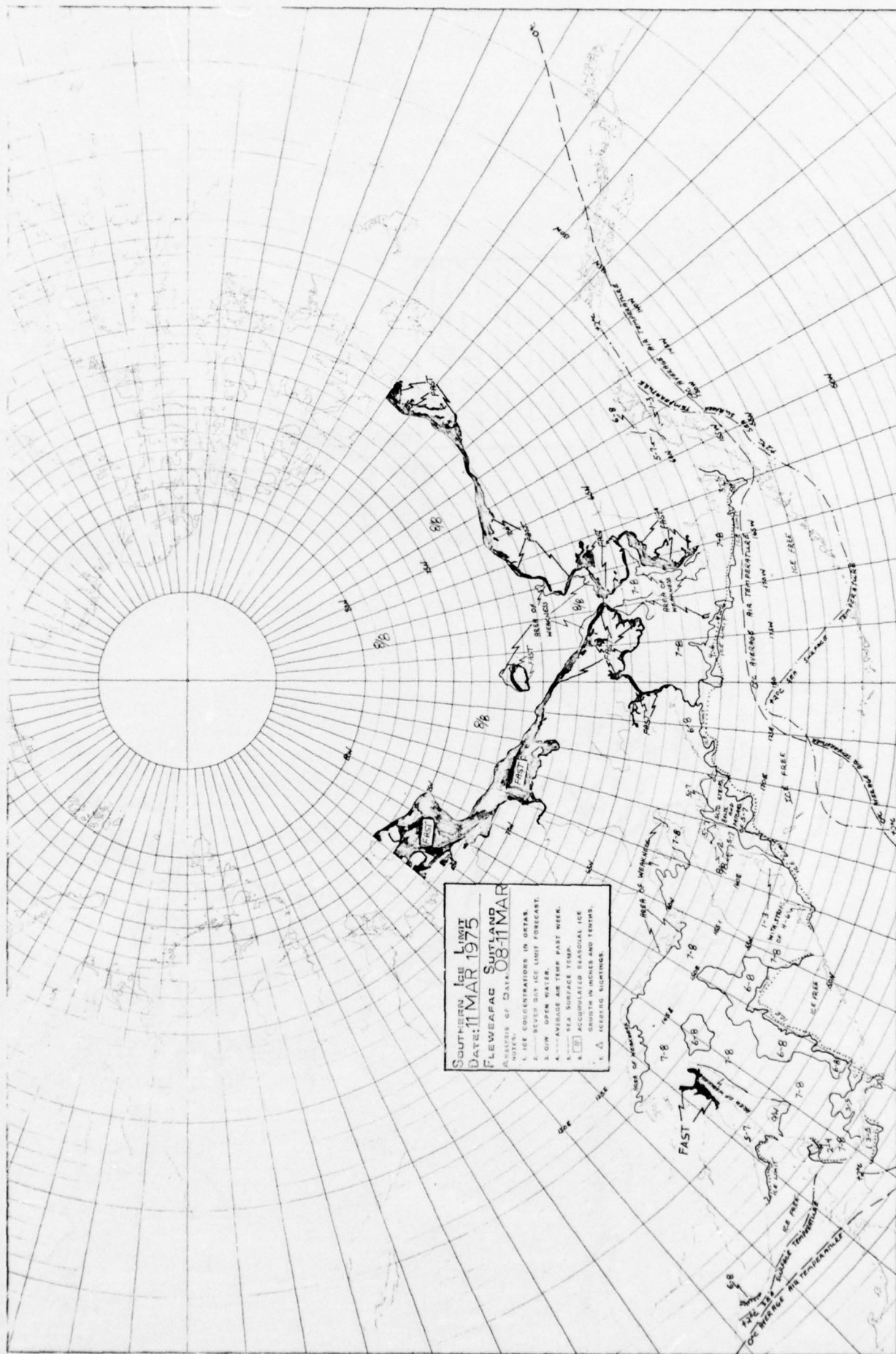


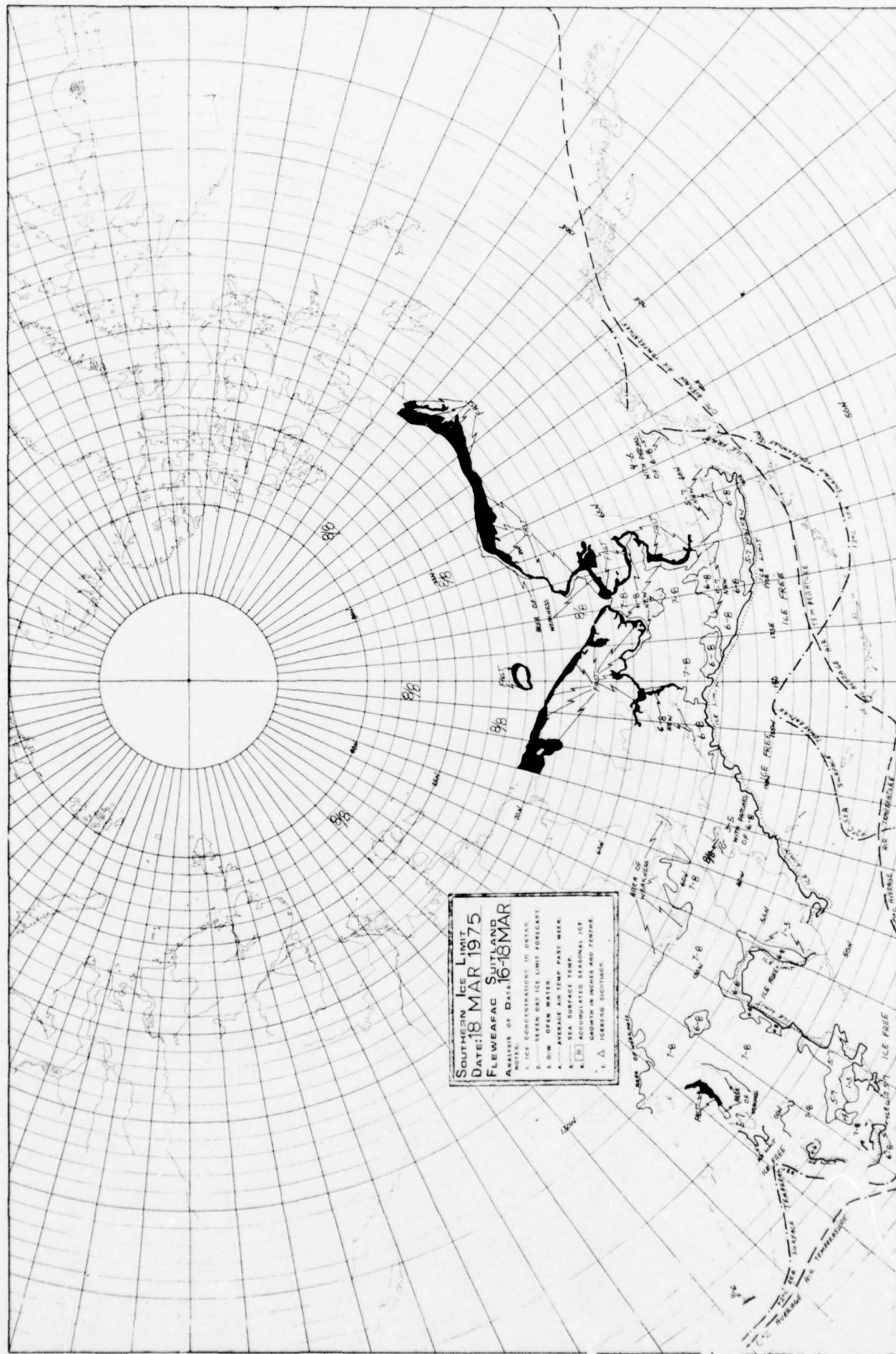


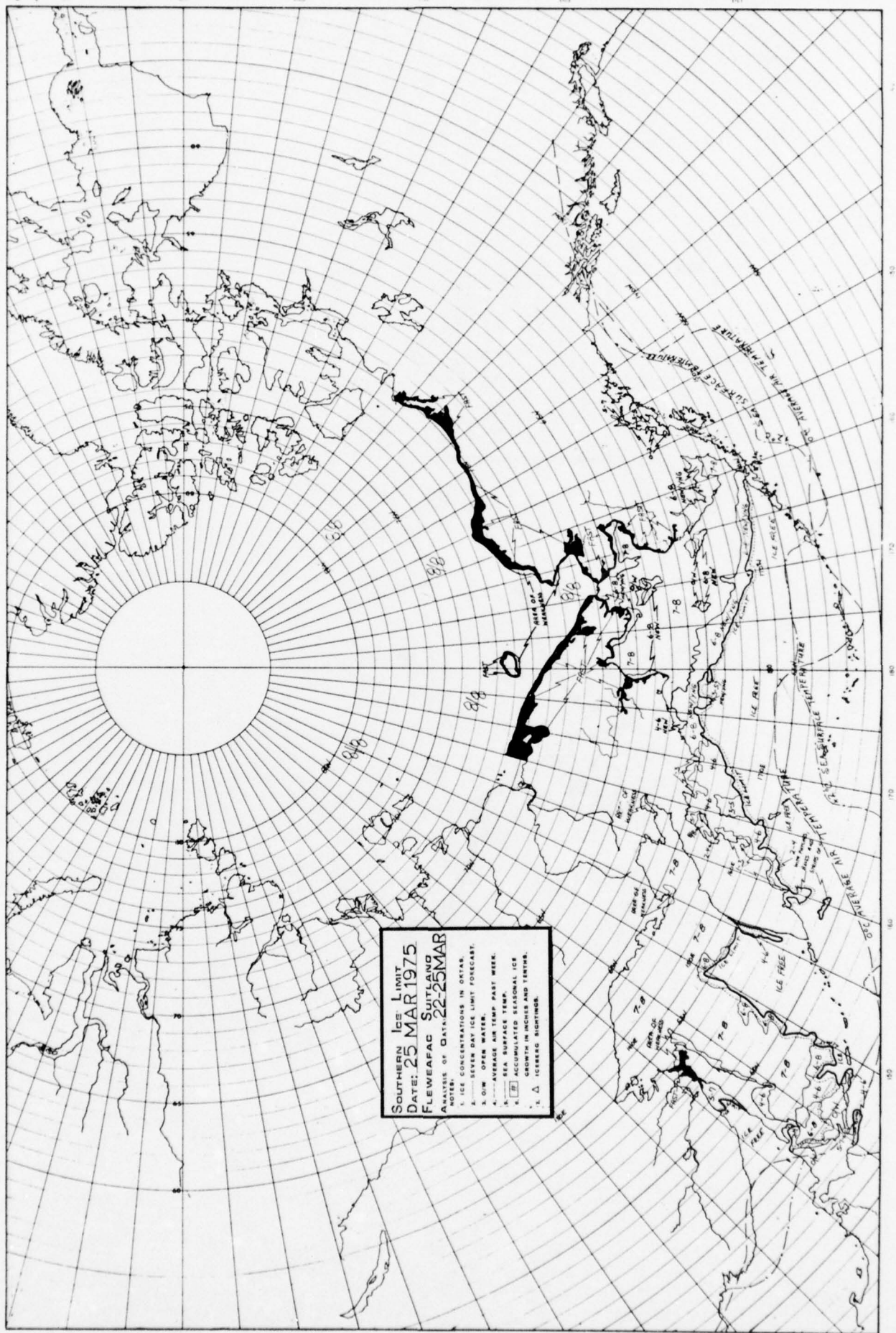


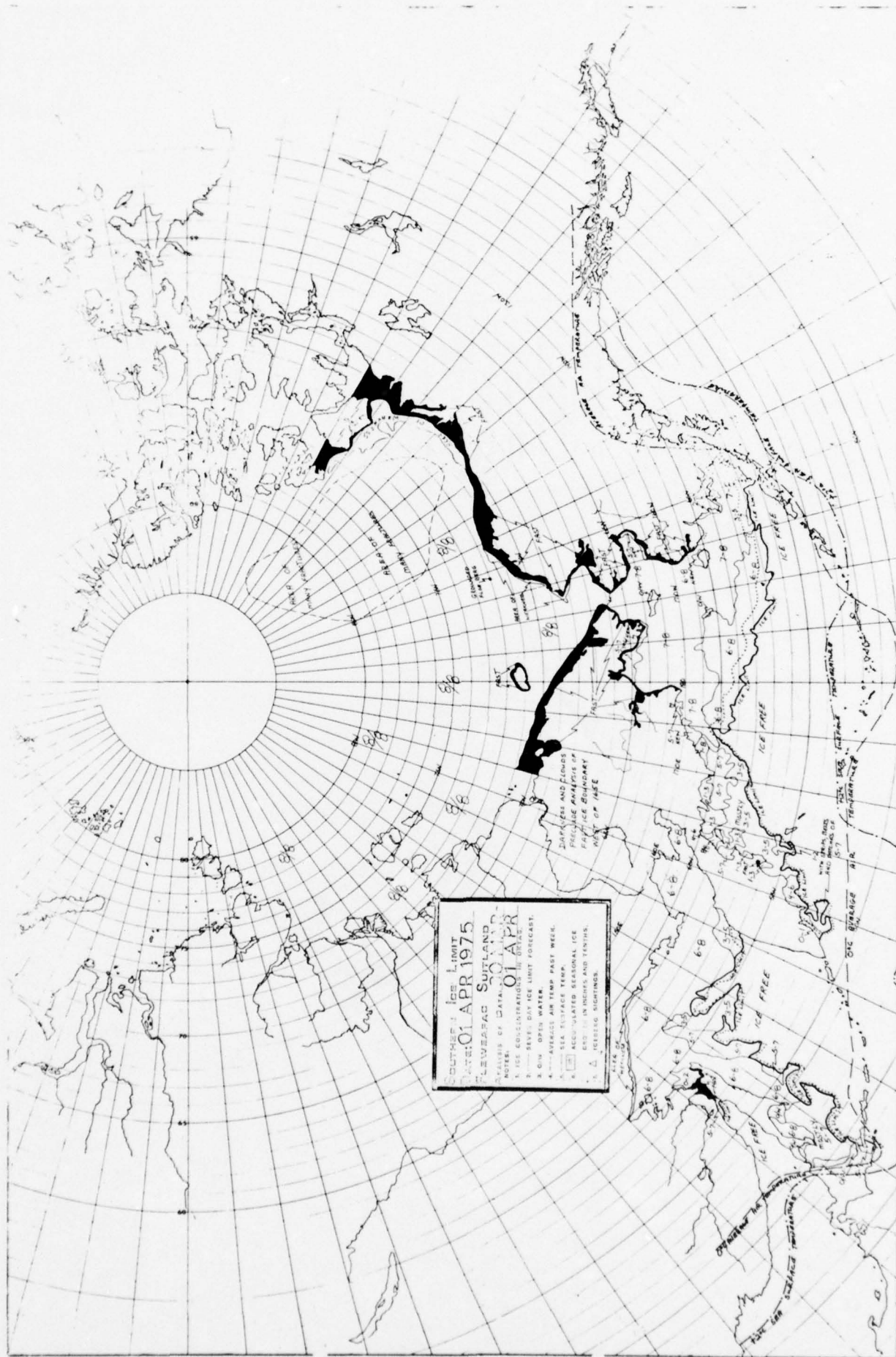


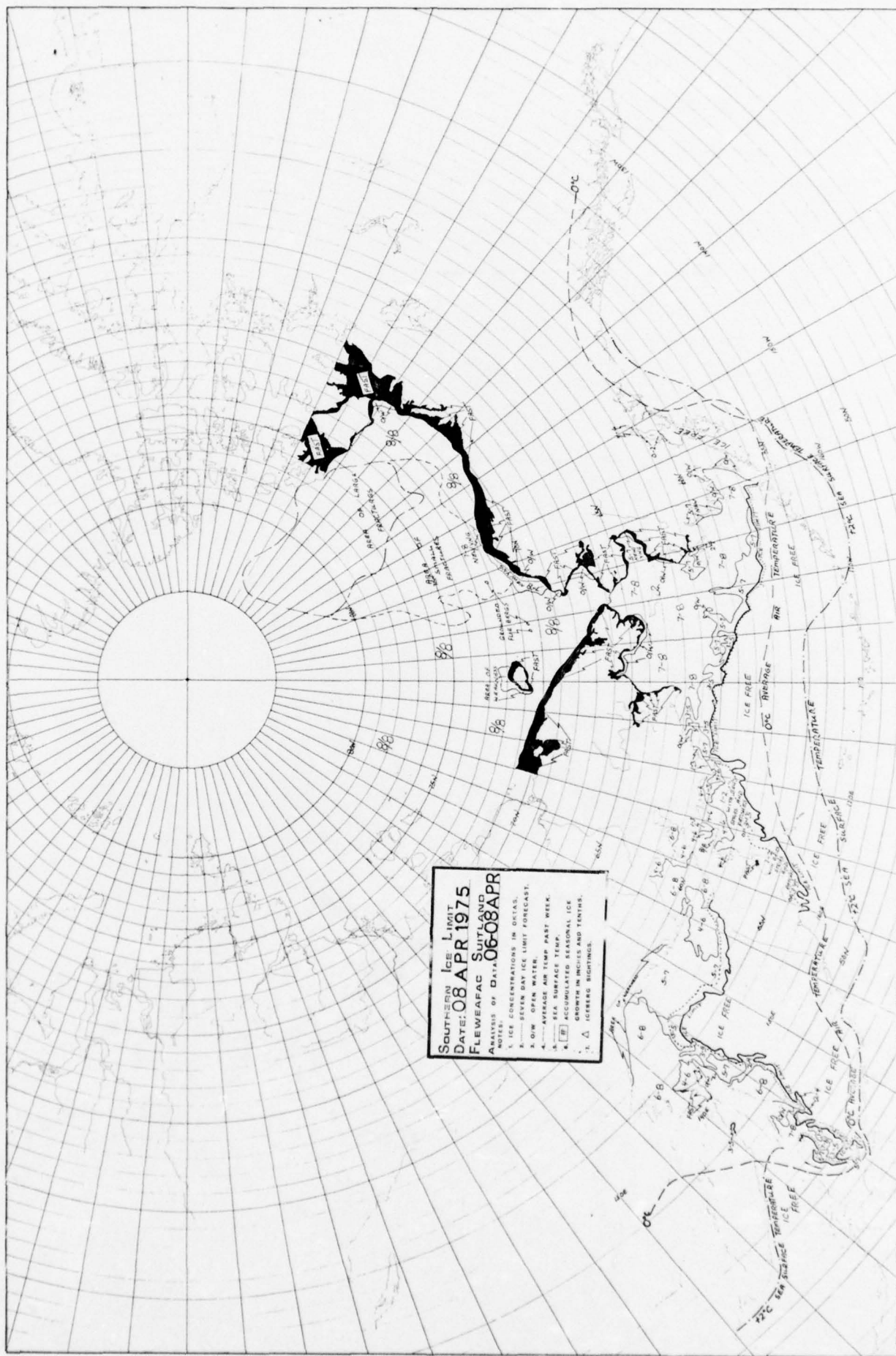


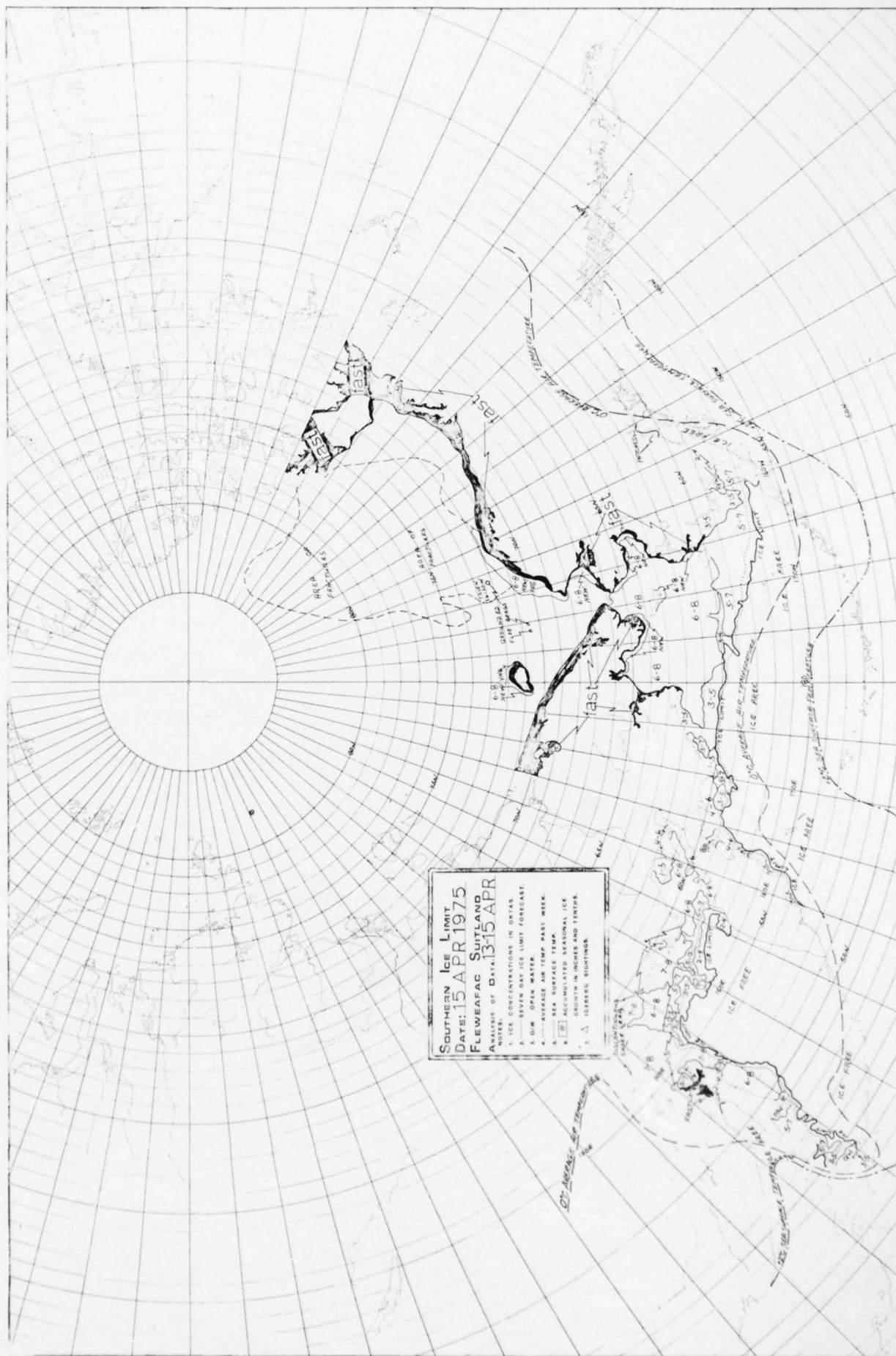


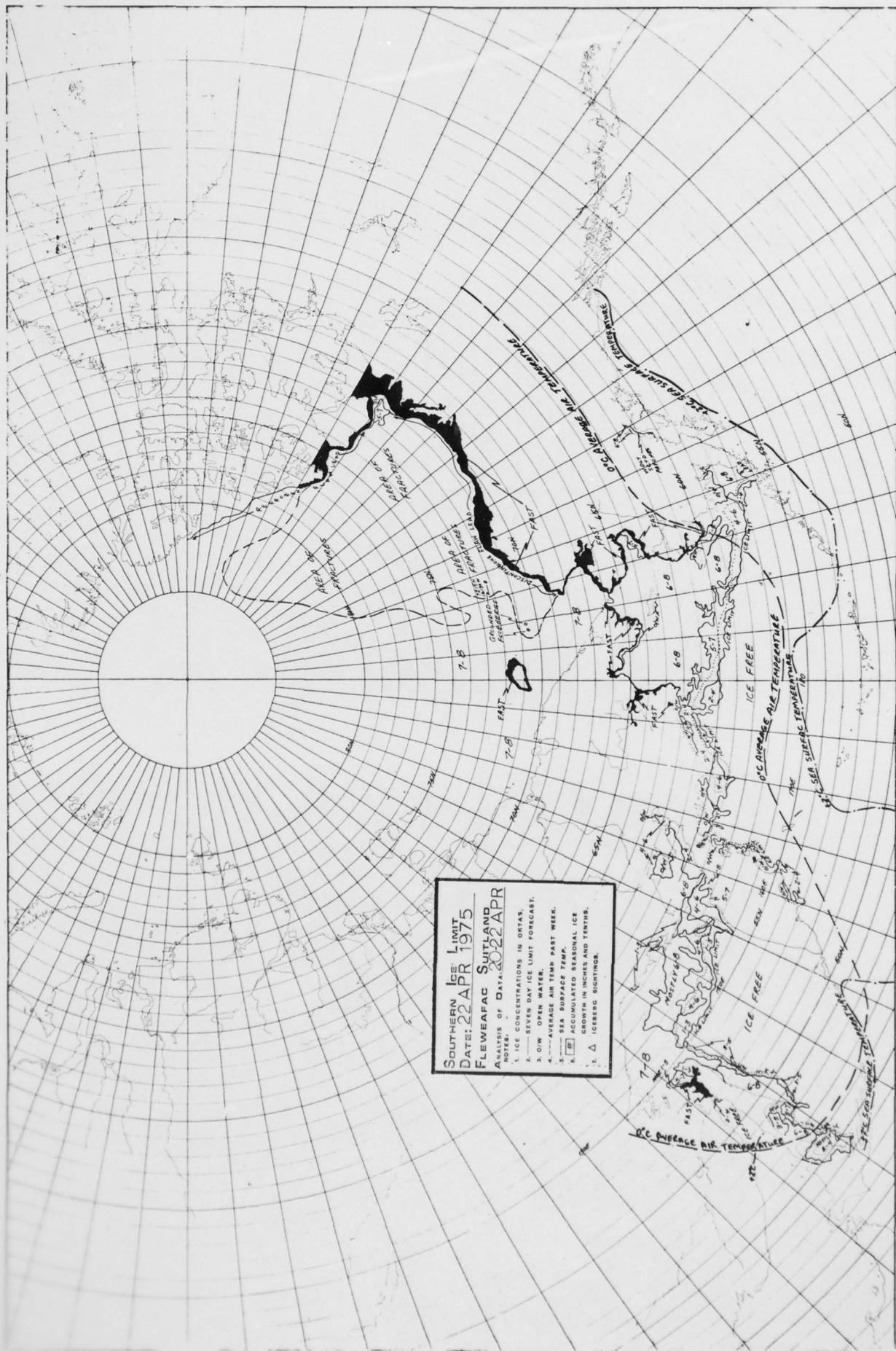


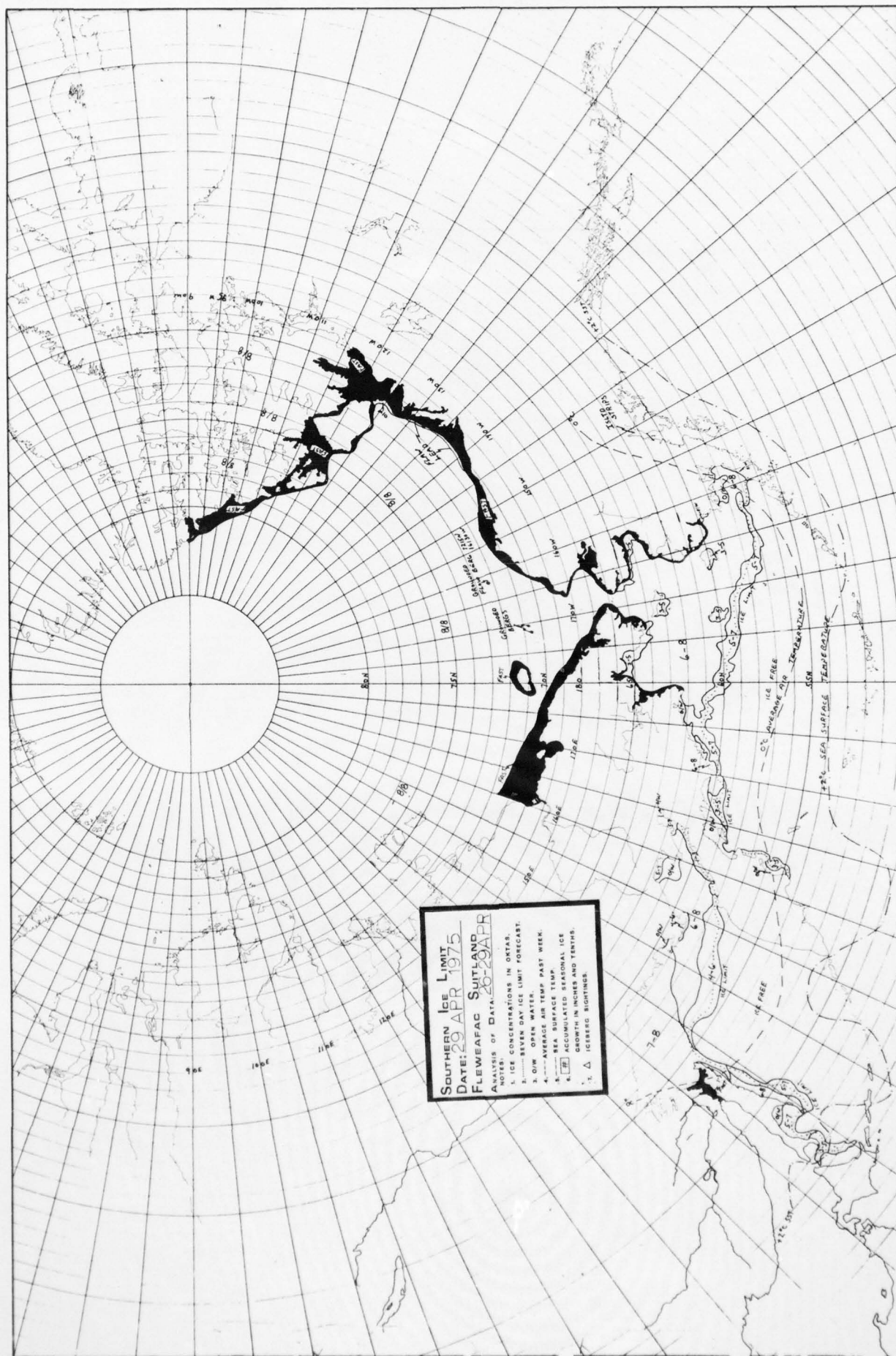


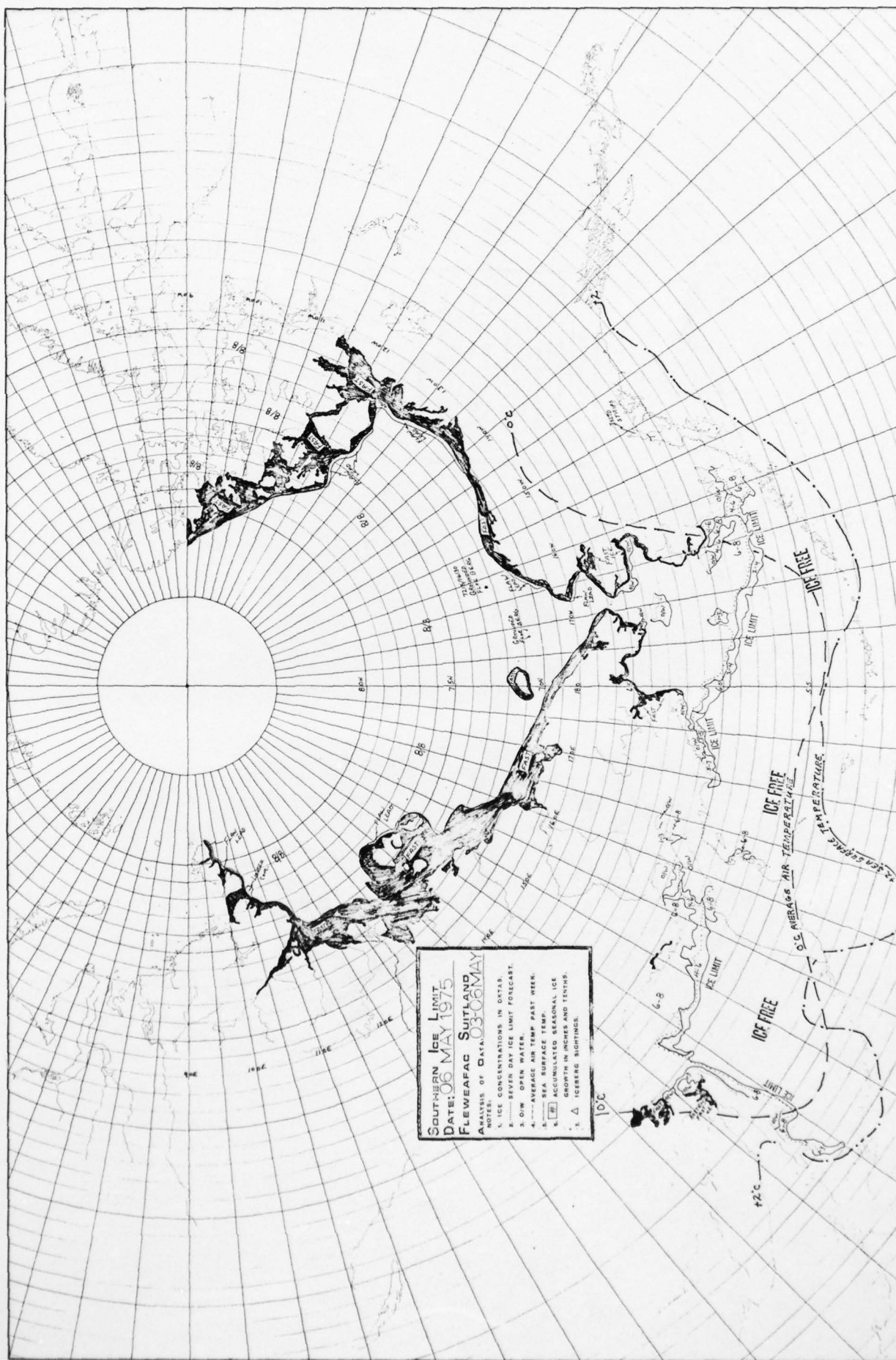


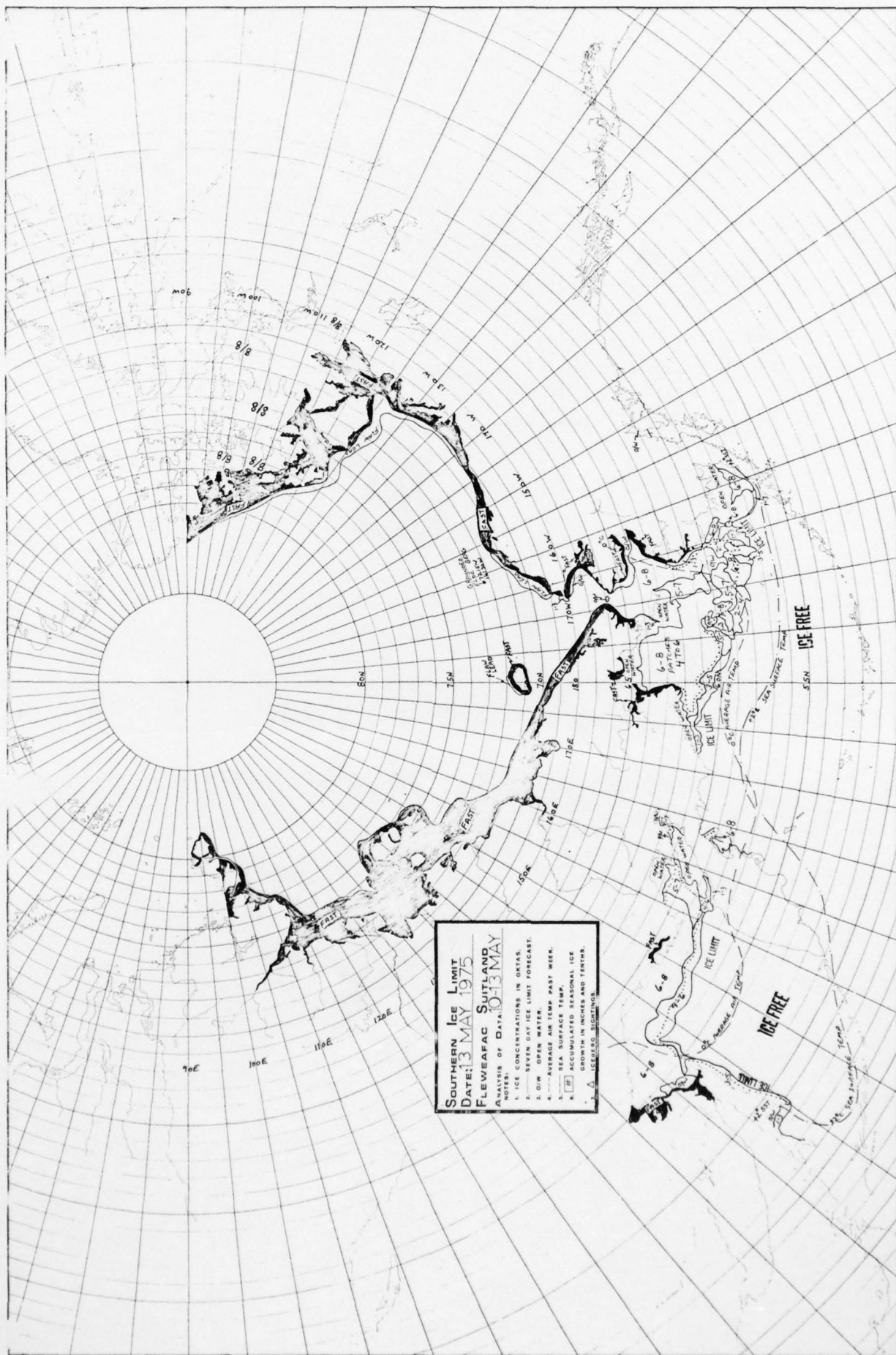


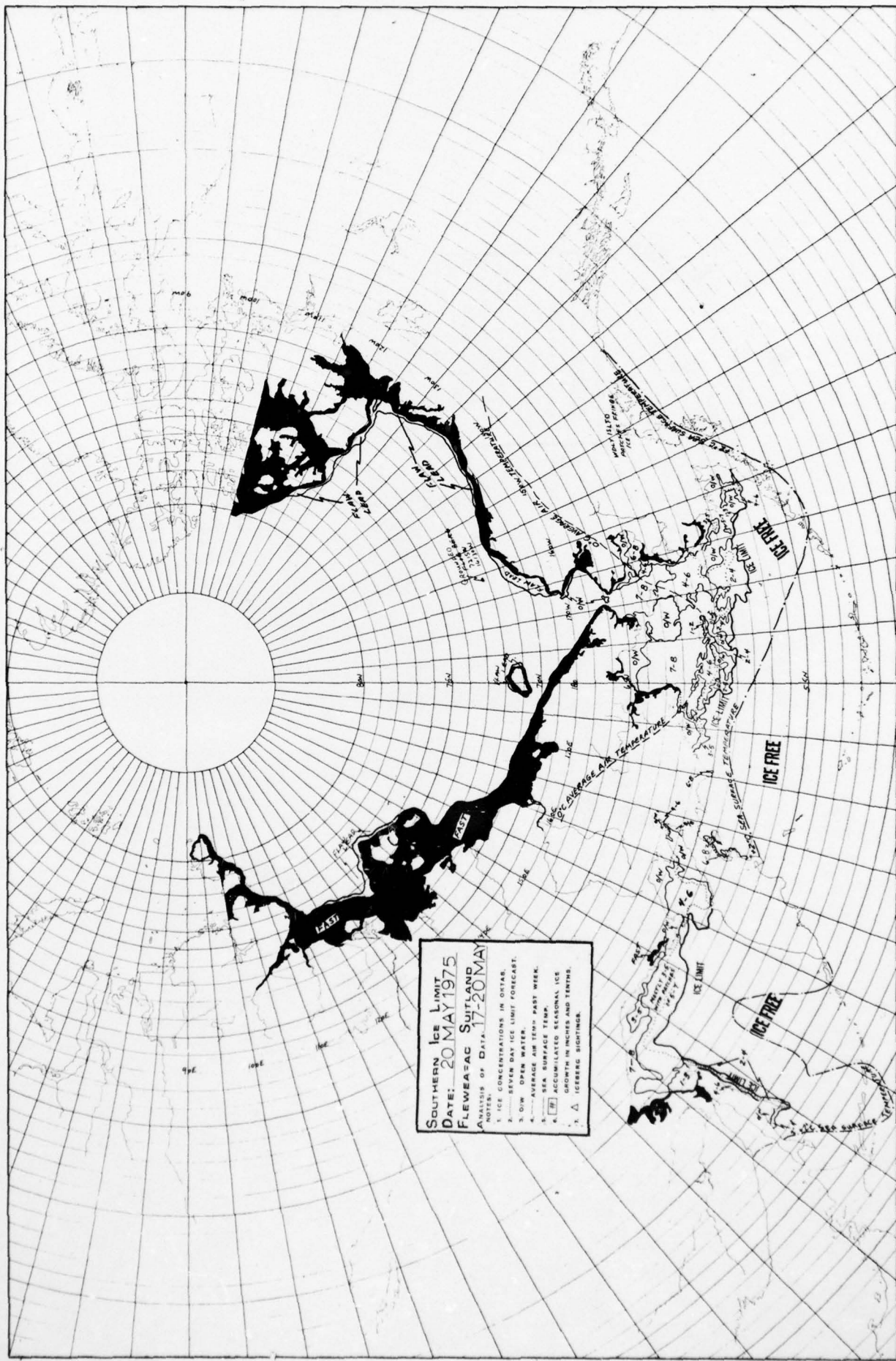






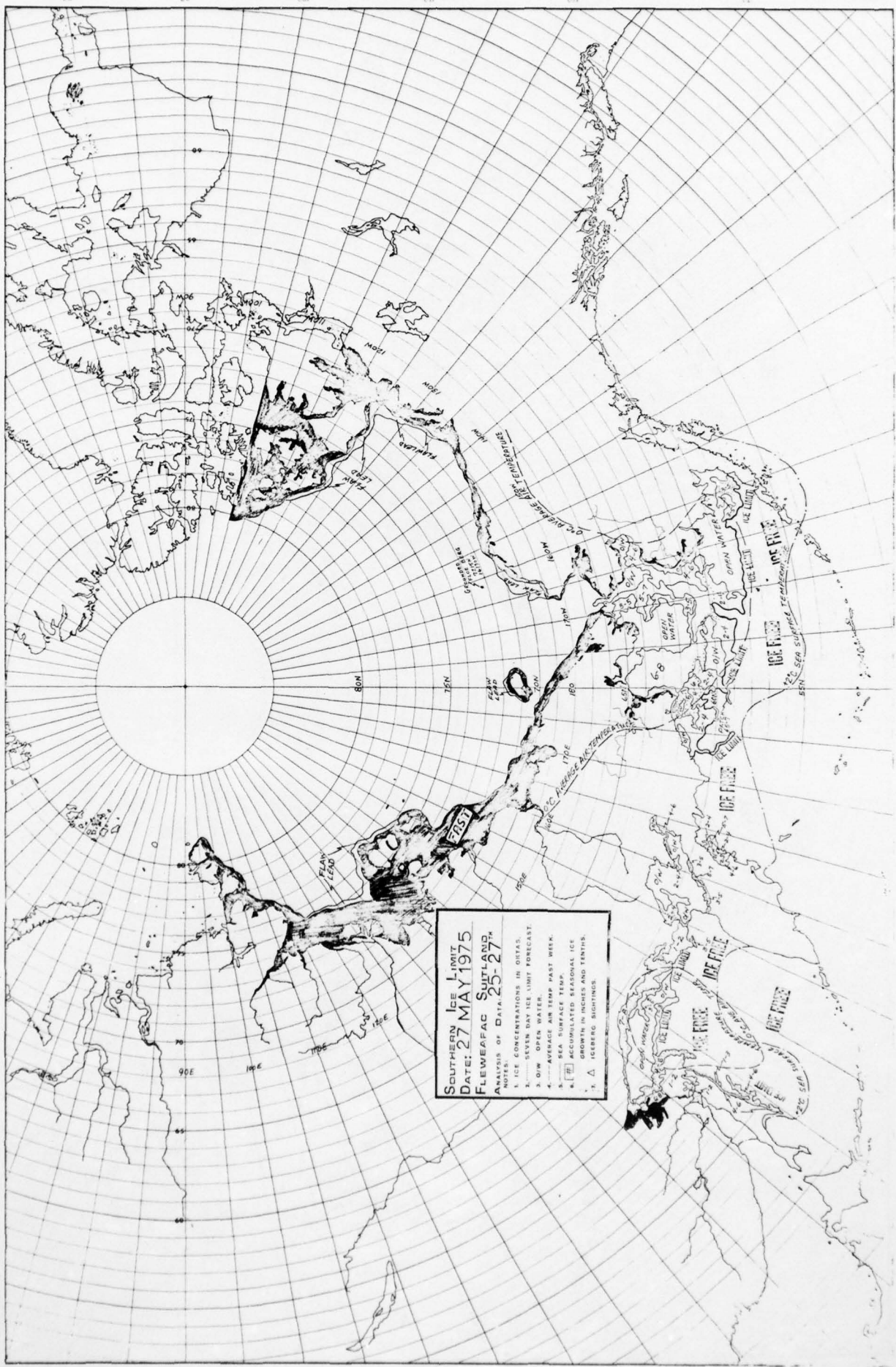


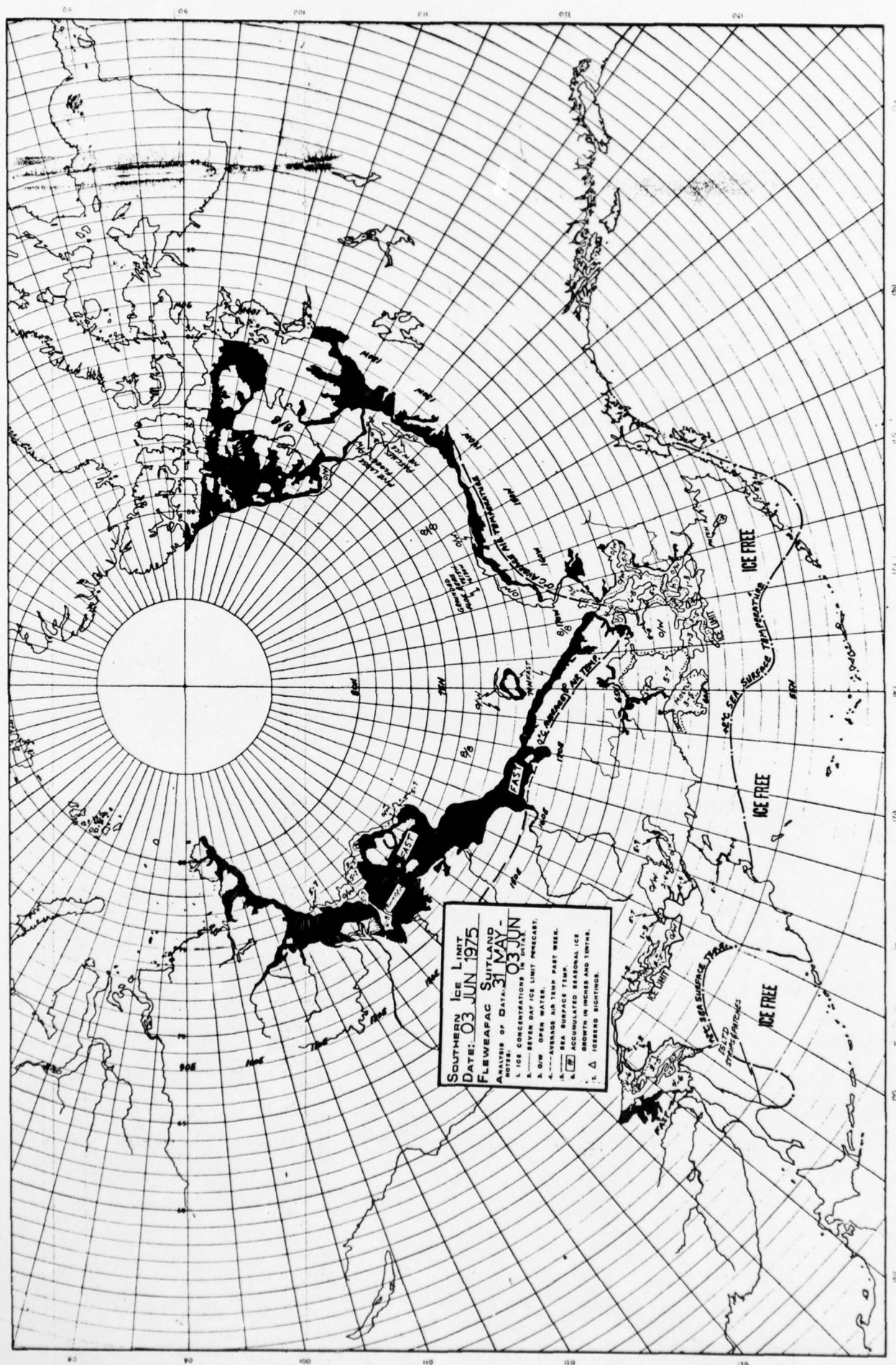


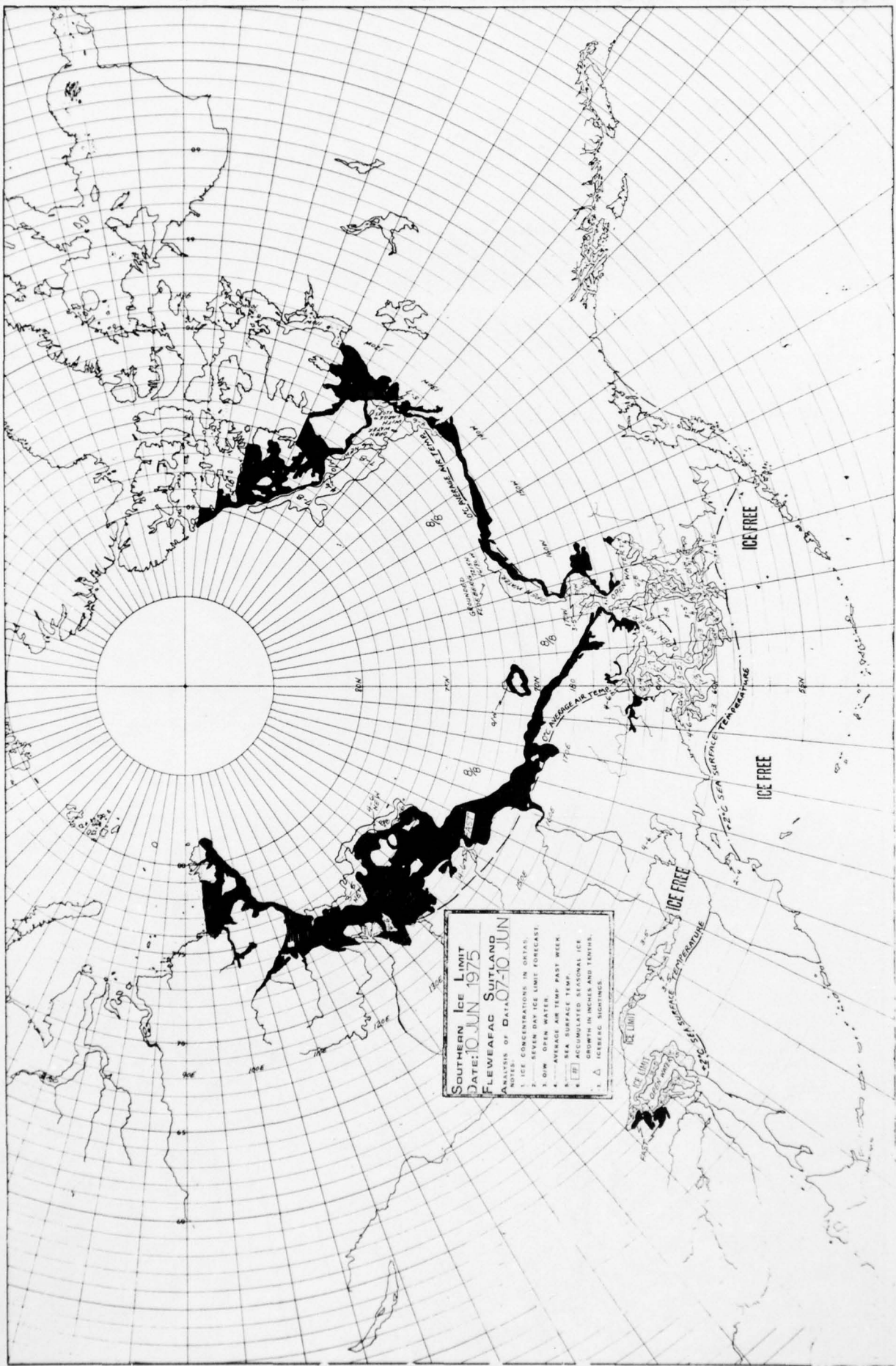


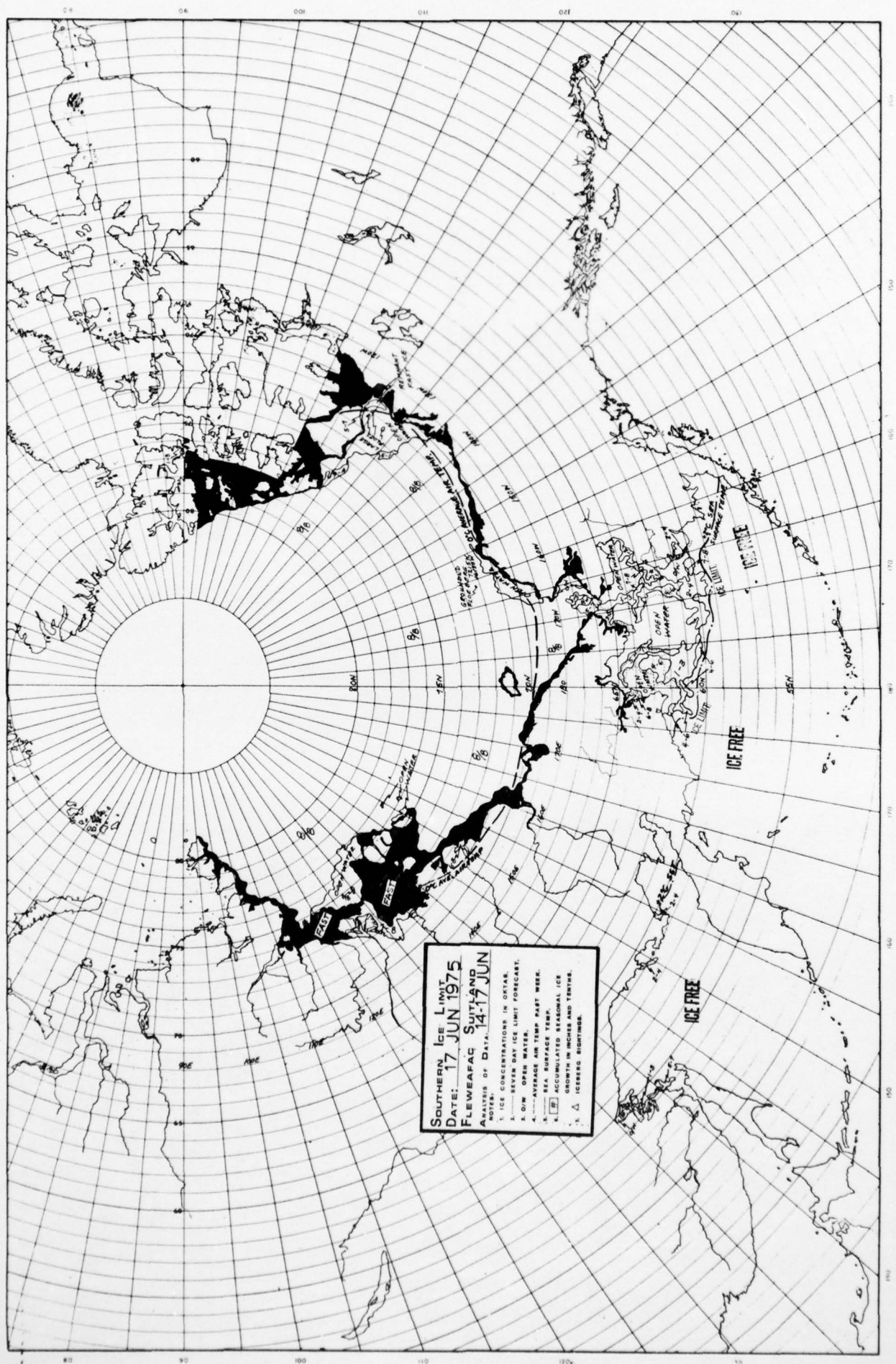
SOUTHERN ICE LIMIT
DATE: 20 MAY 1975
FLEWETAC SUITLAND
ANALYSIS OF DATA 17-20 MAY

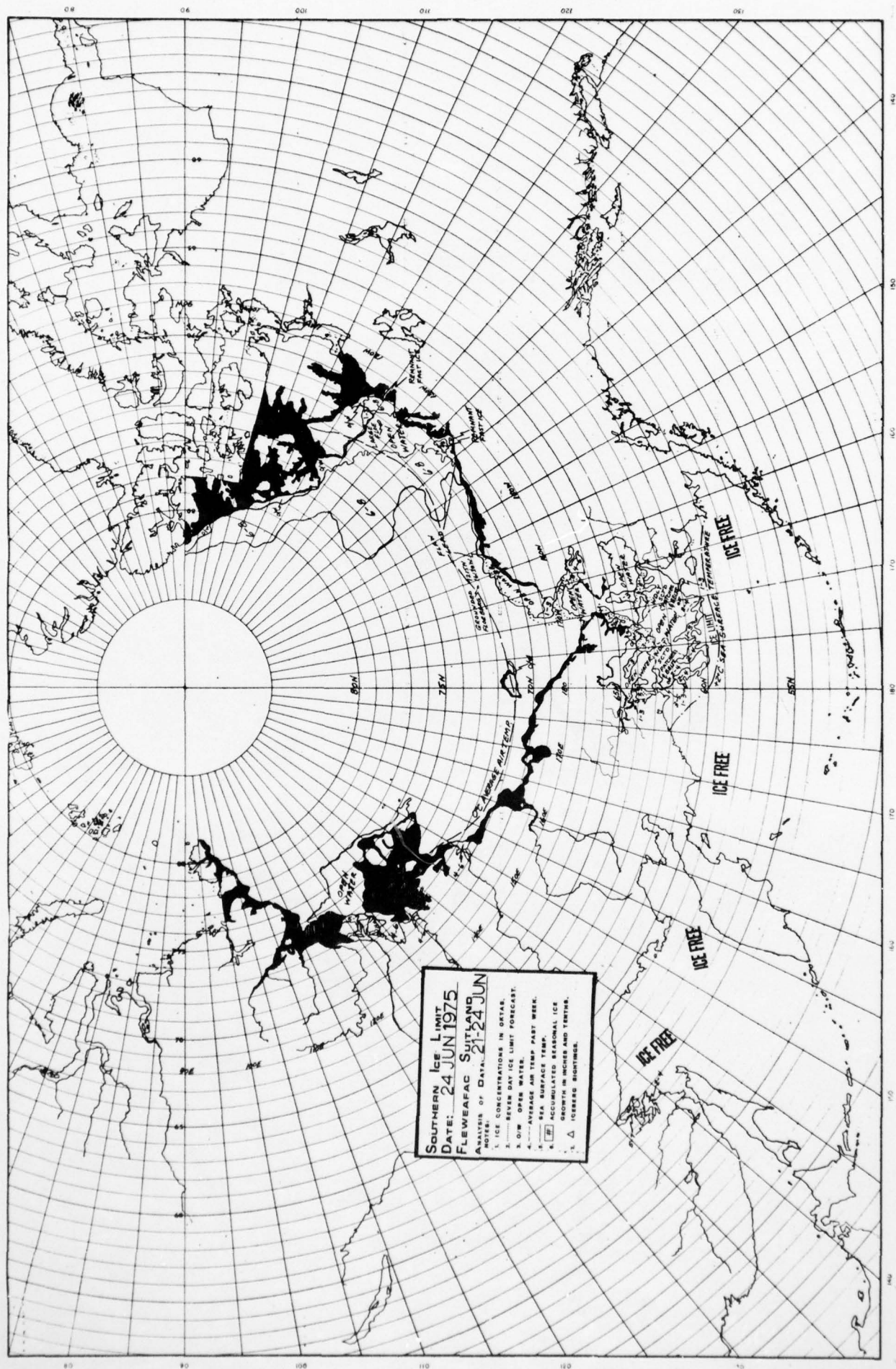
1. ICE CONCENTRATIONS IN OCTAS.
2. SEVEN MILE LIMIT FORECAST.
3. DOW OPEN WATER TEMP PAST WEEK.
4. AVERAGE AIR TEMP PAST WEEK.
5. SEA SURFACE TEMP.
6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
7. ICEBERG SIGHTINGS.

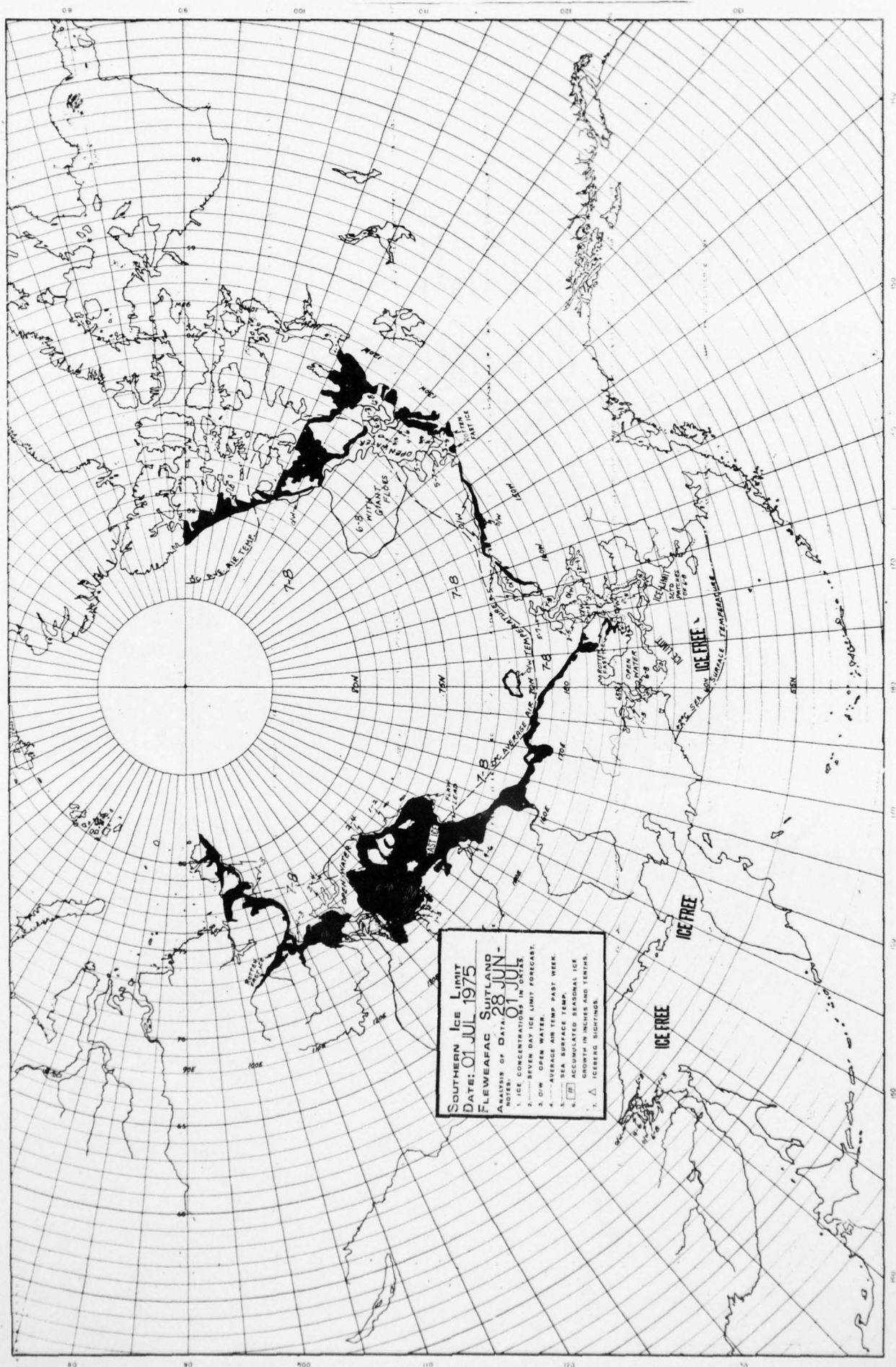


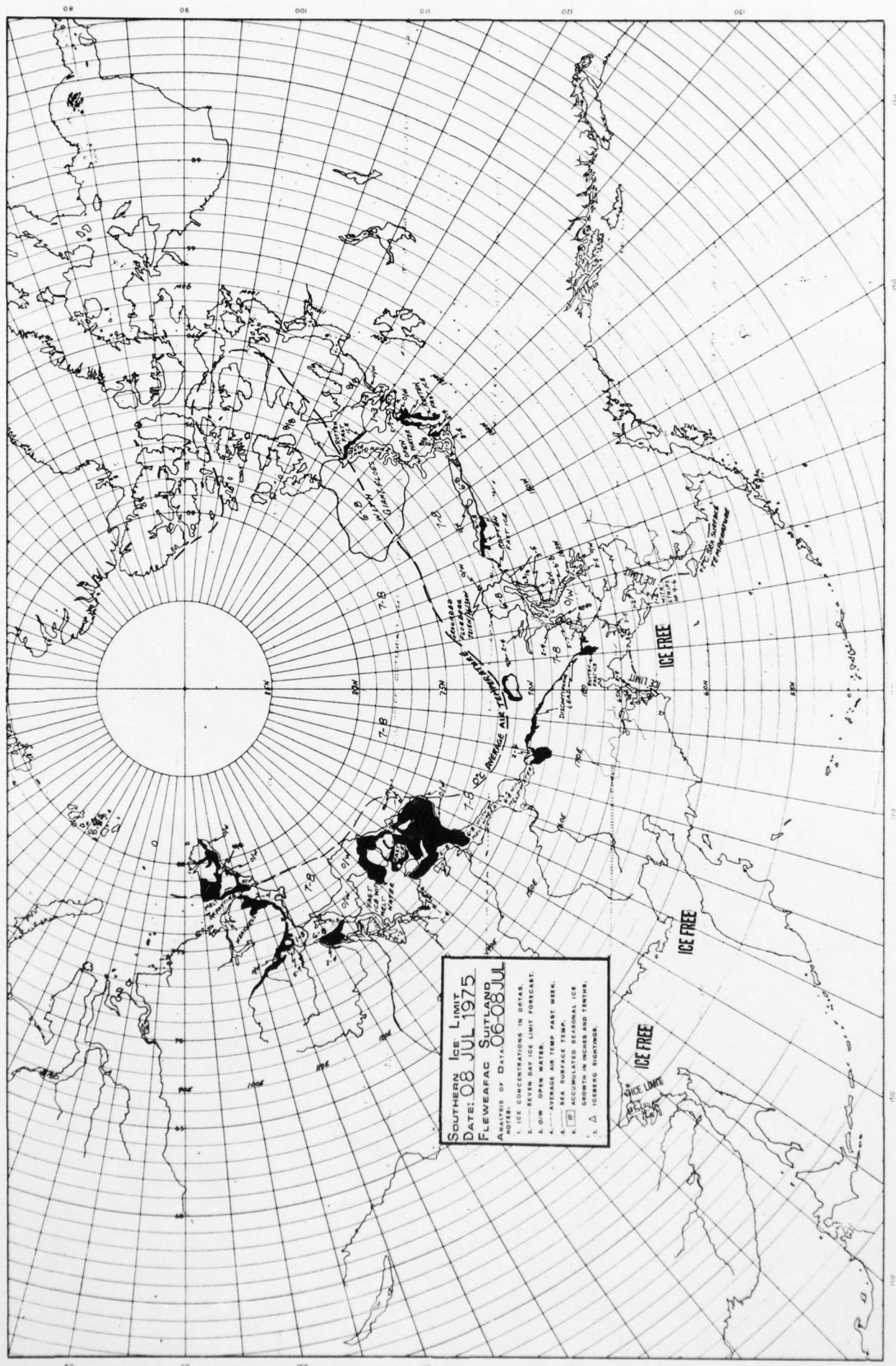


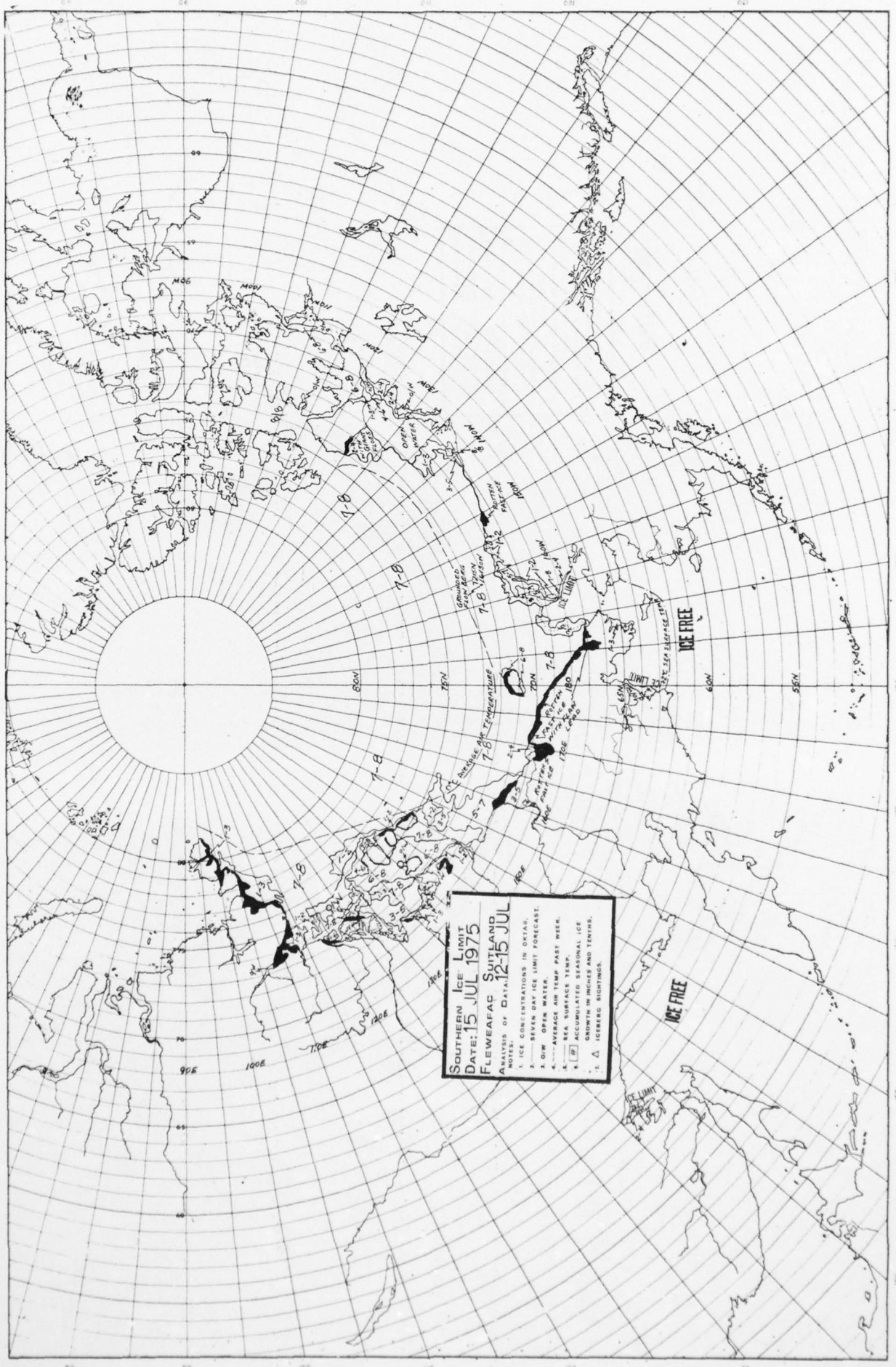


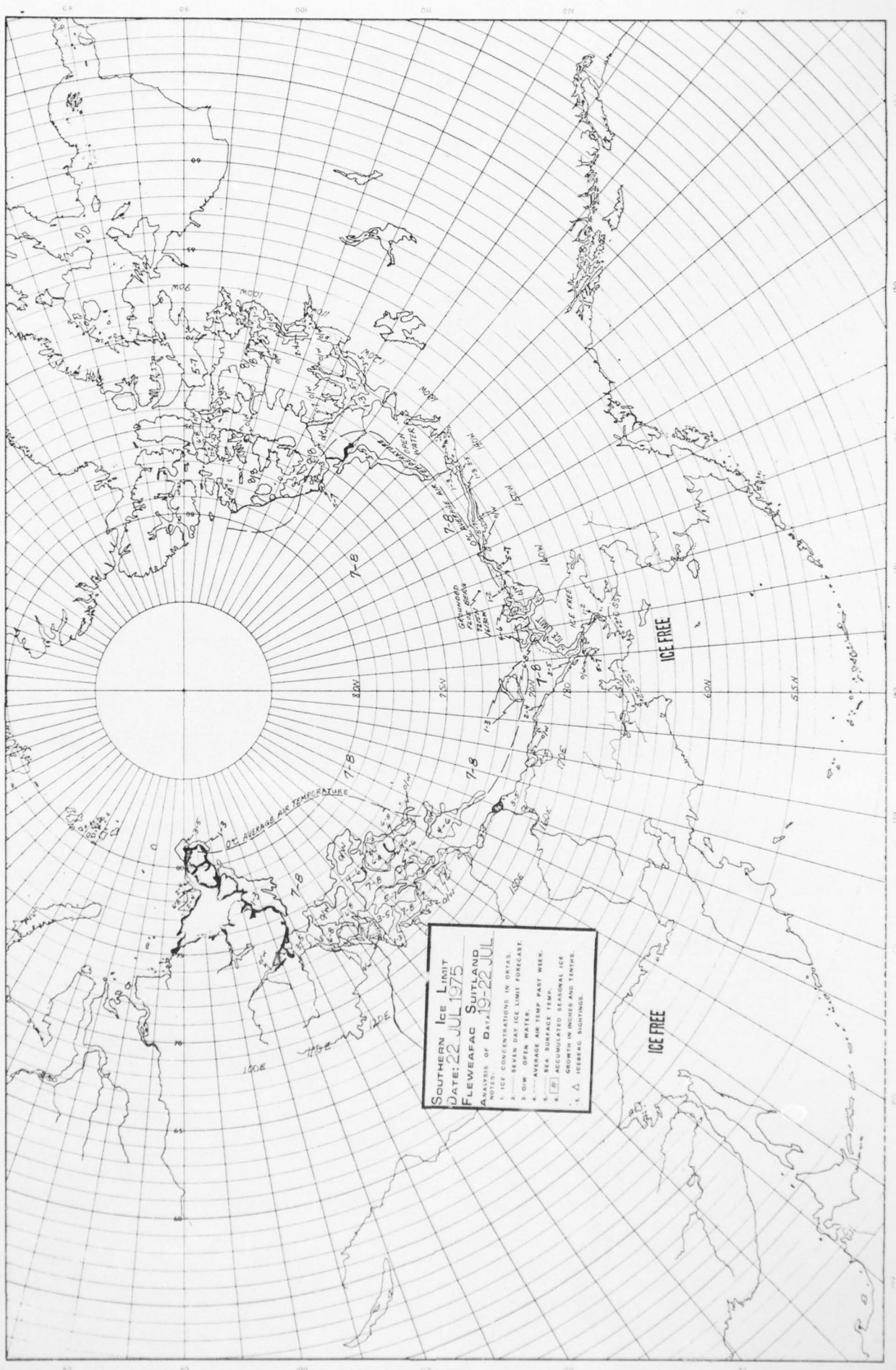












SOUTHERN ICE LIMIT
 DATE: 22 JUL 1975
 FLEWEEFAC SUTLAND
 ANALYSIS OF DATA 19-22 JUL
 1. ICE CONCENTRATIONS IN DXTAS.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. DIM OPEN WATER.
 4. AVERAGE AIR TEMP PAST WEEK.
 5. AREA SURFACE TEMP.
 6. ACCUMULATED SEASONAL ICE
 GROWTH IN INCHES AND TENTHS.
 7. ICEBERG SIGHTINGS.

AD-A033 345

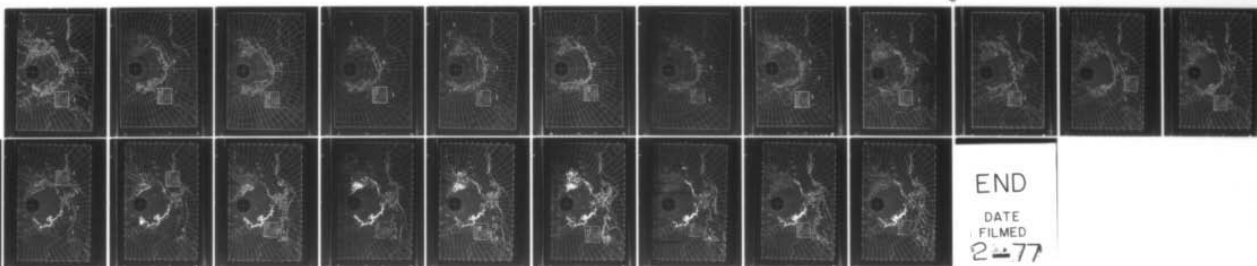
FLEET WEATHER FACILITY SUITLAND MD
WESTERN ARCTIC SEA ICE ANALYSES 1972-1975. (U)
JUN 76

F/6 8/12

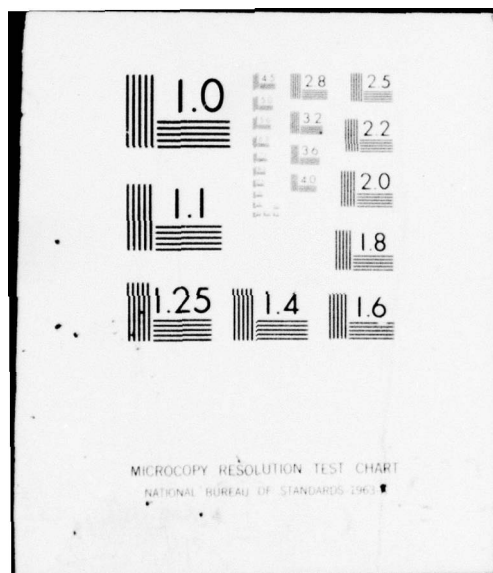
UNCLASSIFIED

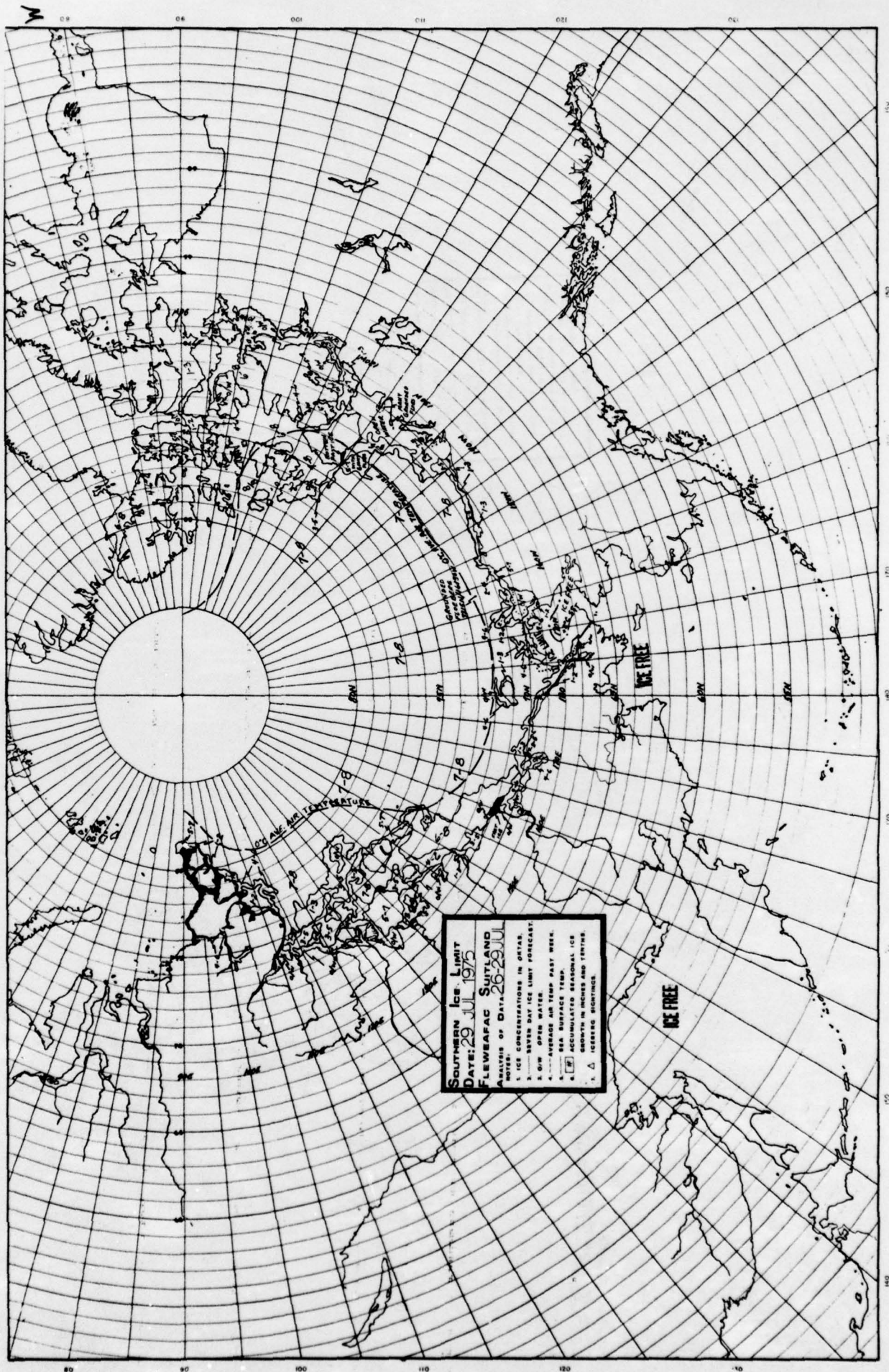
NL

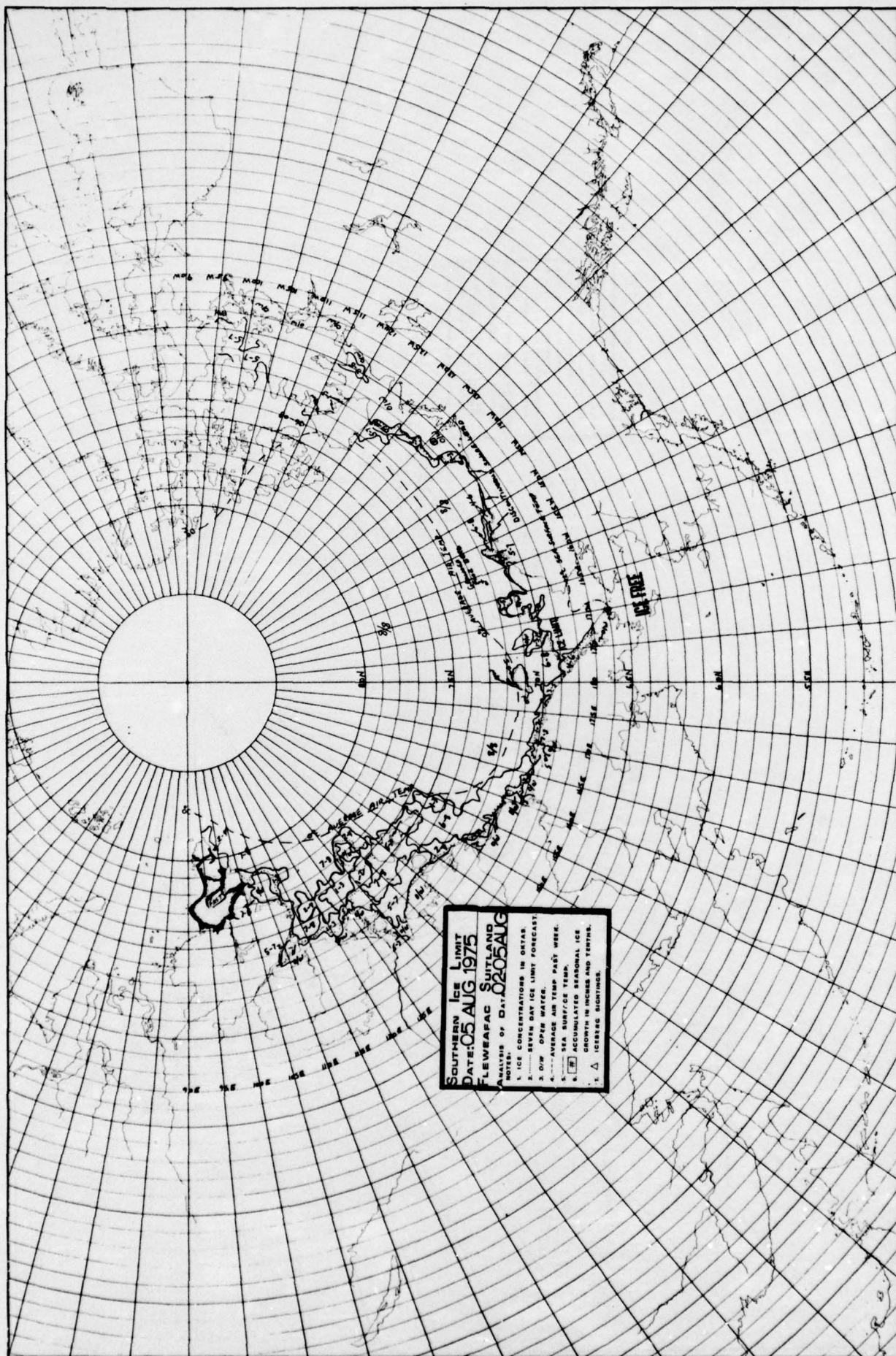
3 OF 3
AD
A033345

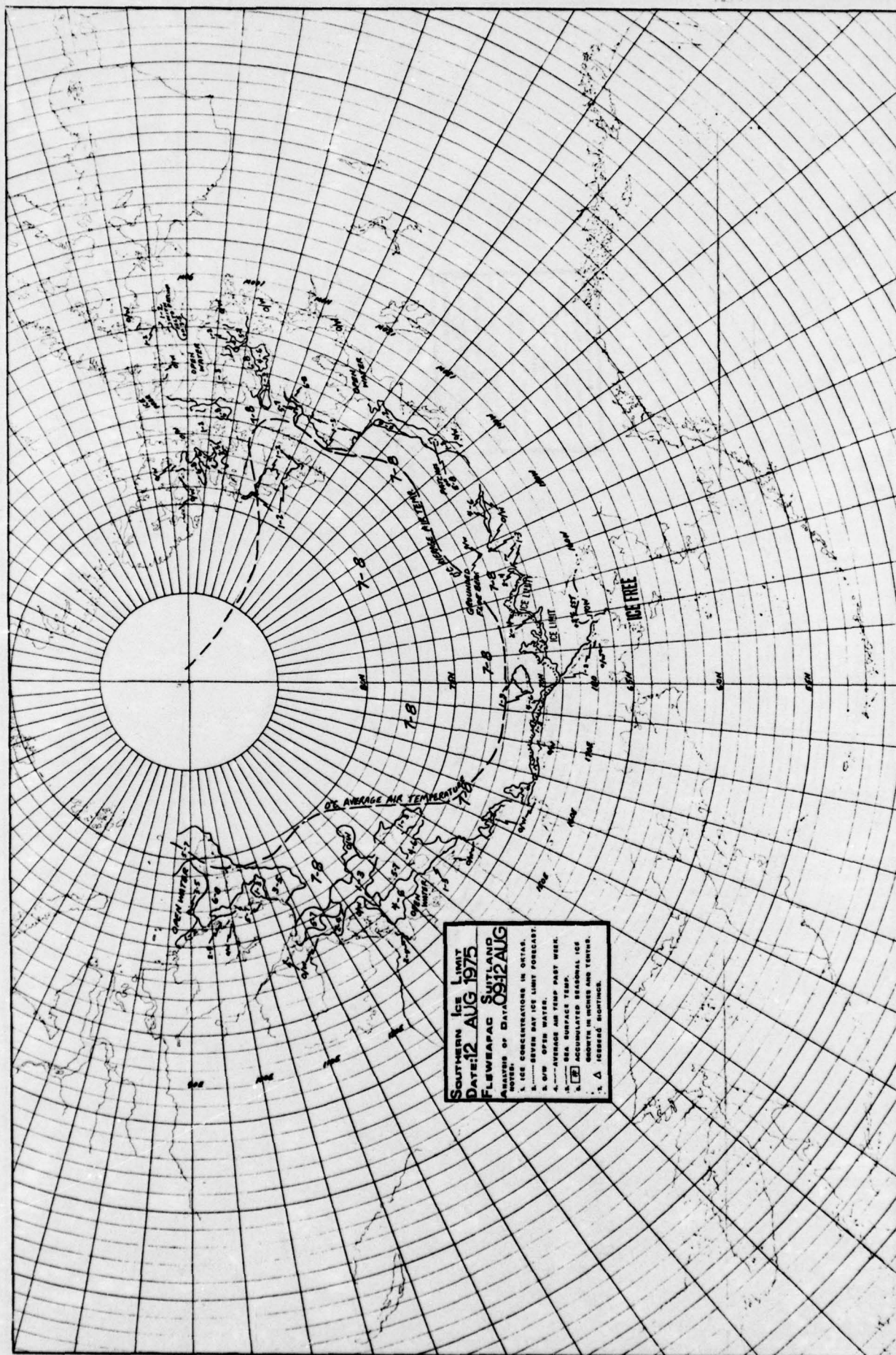


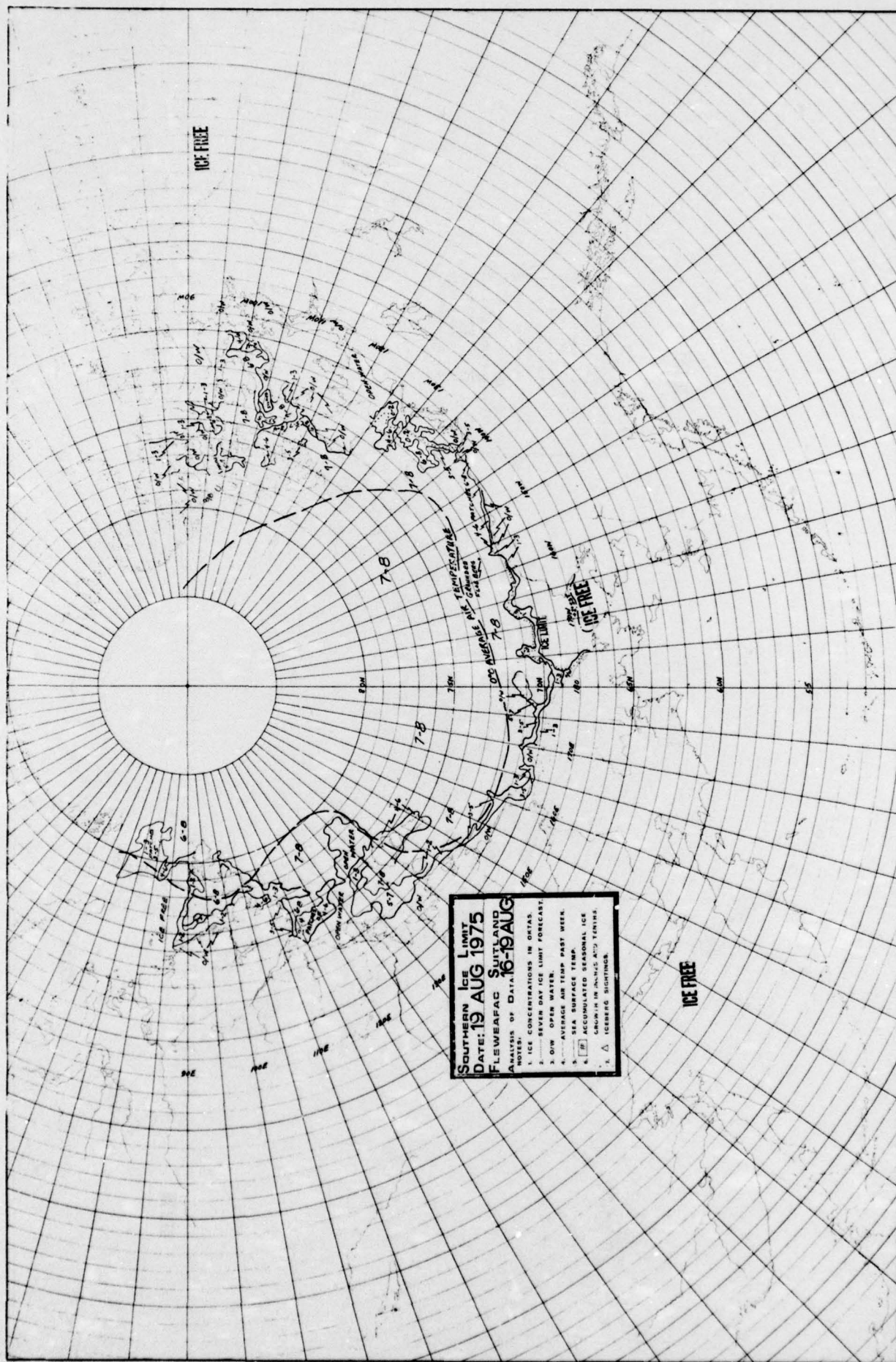
END
DATE
FILMED
2-77





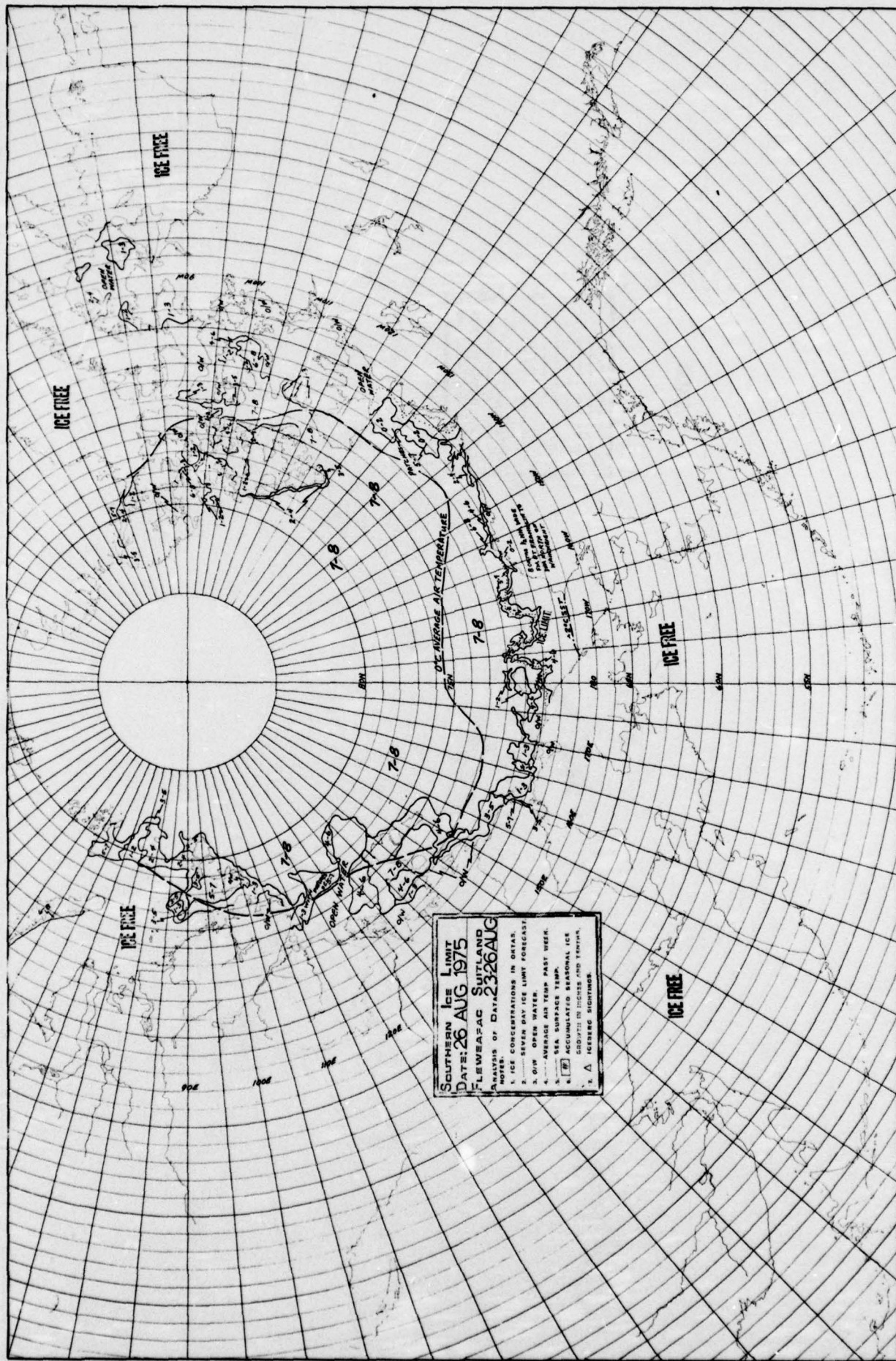






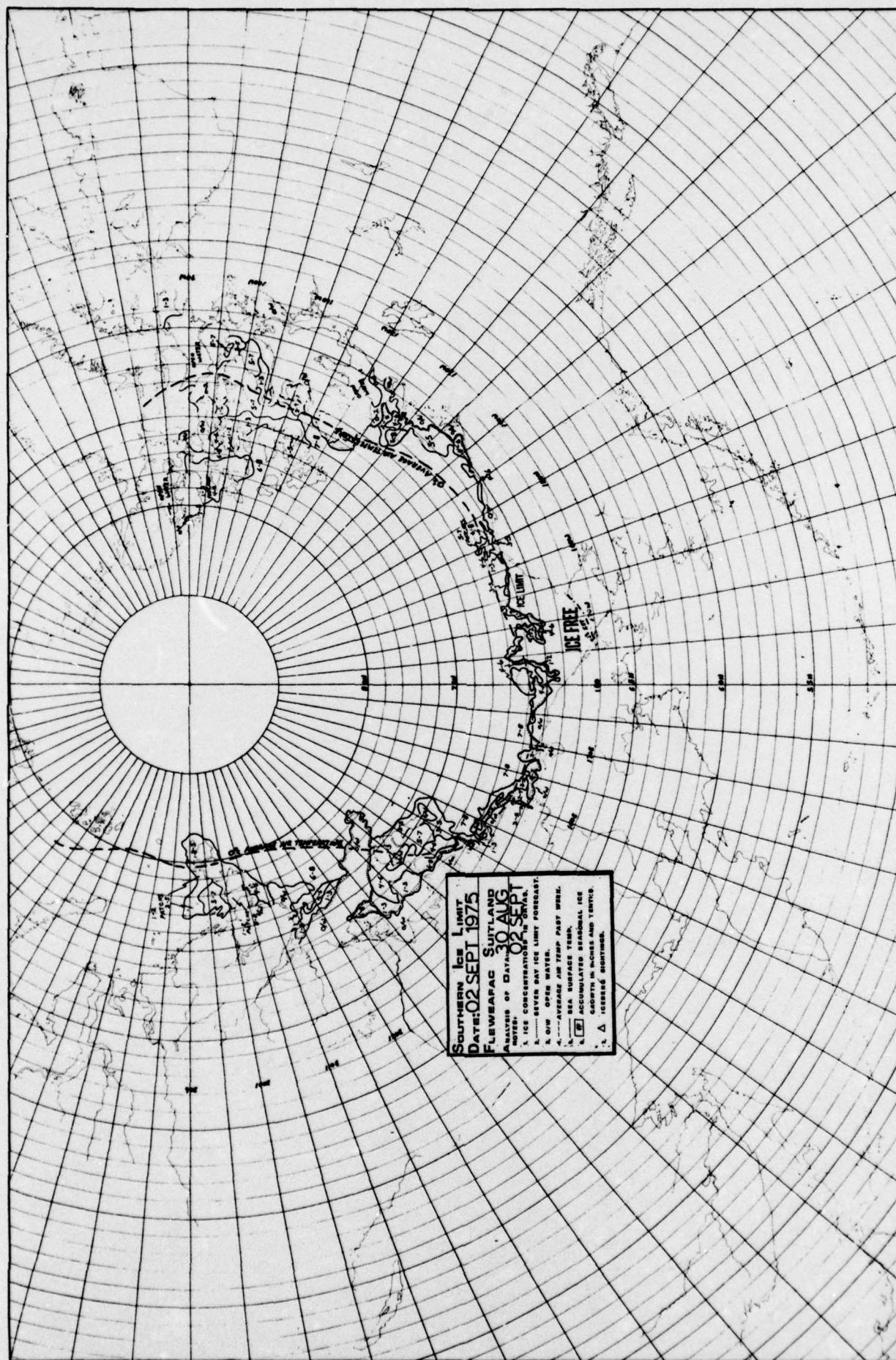
SOUTHERN ICE LIMIT
DATE: 19 AUG 1975
FLEWEPAC SOUTLAND 16-19 AUG

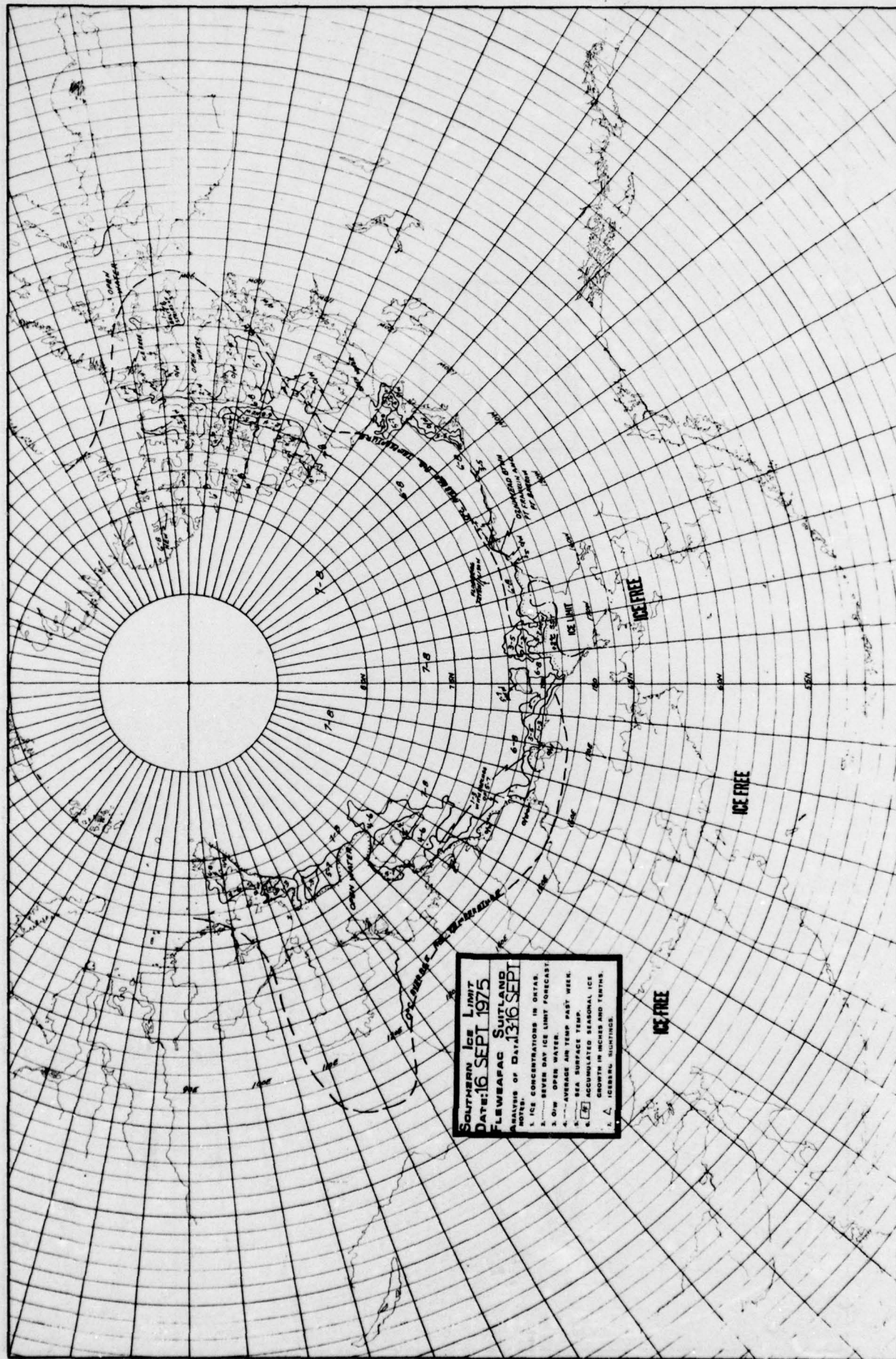
ANALYSIS OF DATA IN SOUTLAND
 NOTES:
 1. ICE CONCENTRATIONS IN OCEAN
 2. SEVEN DAY ICE LIMIT FORECAST
 3. DOW OPEN WATER
 4. AVERAGE AIR TEMP PAST WEEK
 5. SEA SURFACE TEMP
 6. ACCUMULATED SEASONAL ICE
 GROWTH IN INCHES A.T.T. TEMPS
 7. ICEBERG SIGHTINGS



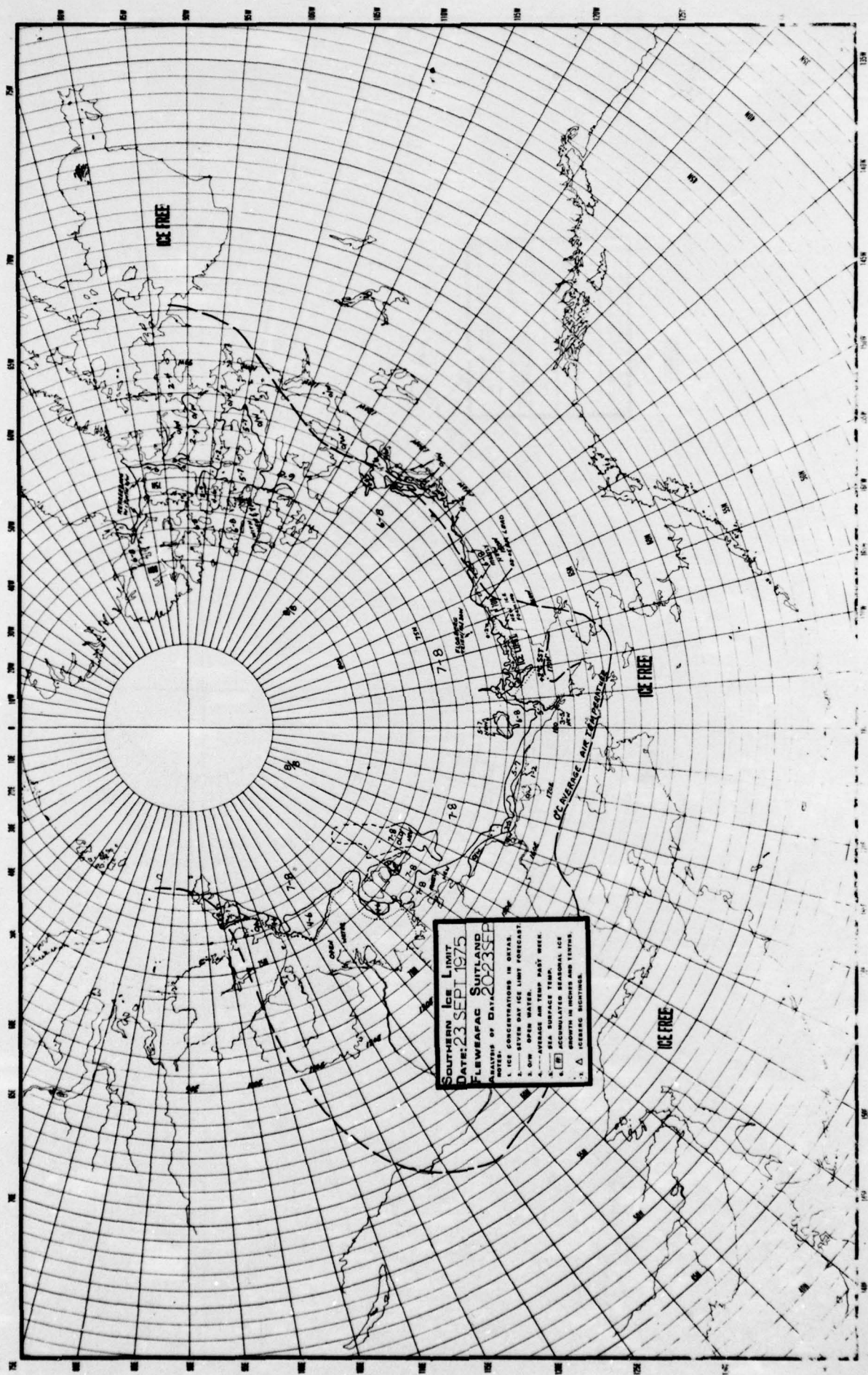
SOUTHERN ICE LIMIT
DATE: 26 AUG 1975
FLEWETAC SUTLAND
2326 AUG

ANALYSIS OF DATA:
1. ICE CONCENTRATIONS IN OCEAN
2. SEVEN DAY ICE LIMIT FORECAST
3. OPEN WATER
4. AVERAGE AIR TEMP PAST WEEK
5. SURFACE TEMP
6. ACCUMULATED SEASONAL ICE
GROWTH IN INCHES AND TENTHS
7. ICEBERG SIGHTINGS





SOUTHERN ICE LIMIT
DATE: 16 SEPT 1975
FLEWELAPAC SOUTHLAND
ANALYSIS OF DATA: 13-16 SEPT
UNITS:
1. ICE CONCENTRATIONS IN OCTAS.
2. DASHED LINE: MAY ICE LIMIT FORECAST
3. DOW: OPEN AND TEMP DATA HERE
4. DASHED LINE: AVERAGE AN TEMP DATA HERE
5. DASHED LINE: SEA SURFACE TEMP
6. DASHED LINE: ACCUMULATED SEASONAL ICE
7. DASHED LINE: GROWTH IN INCHES AND TENTS
8. DASHED LINE: ICEBERG, NIGHTICE



SOUTHERN ICE LIMIT
DATE: 23 SEPT 1975
FLEWELAC SUTLAND
2023 SEP
ANALYSIS OF DATA
1. ICE CONCENTRATIONS IN DATA
2. SEVEN DAY ICE LIMIT FORECAST
3. OPEN WATER
4. AVERAGE AND TEMP PART WEN
5. SEA SURFACE TEMP
6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS
7. AVERAGE SAILINGS

